Ranger Rick's nature magazine

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4 Tame and Tiny Tiger
9 Cat Quiz
12 Meadow Mystery
15 Happy Bee
16 Ranger Rick & His Friends
20 Nature Club News
23 Orangutan Tangle
24a Ranger Rick's Annual Contest
26 The Snake That Isn't
29 Dear Ranger Rick
33 Ollie Otter's Fun Page
34 Wise Old Owl
38 The Nighthawks
40 Hollow Oak Book Nook
41 Monarchs to Mexico
44 Sea Stamps

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Back—Nighthawk by Jim Anderson

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I give my pledge as a member of Ranger Rick's Nature Club

To use my eyes to see the beauty of all outdoors.

To train my mind to learn the importance of nature.

To use my hands to help protect our soil, water, woods and wildlife.

And, by my good example, to show others how to respect, properly use and enjoy our natural resources.

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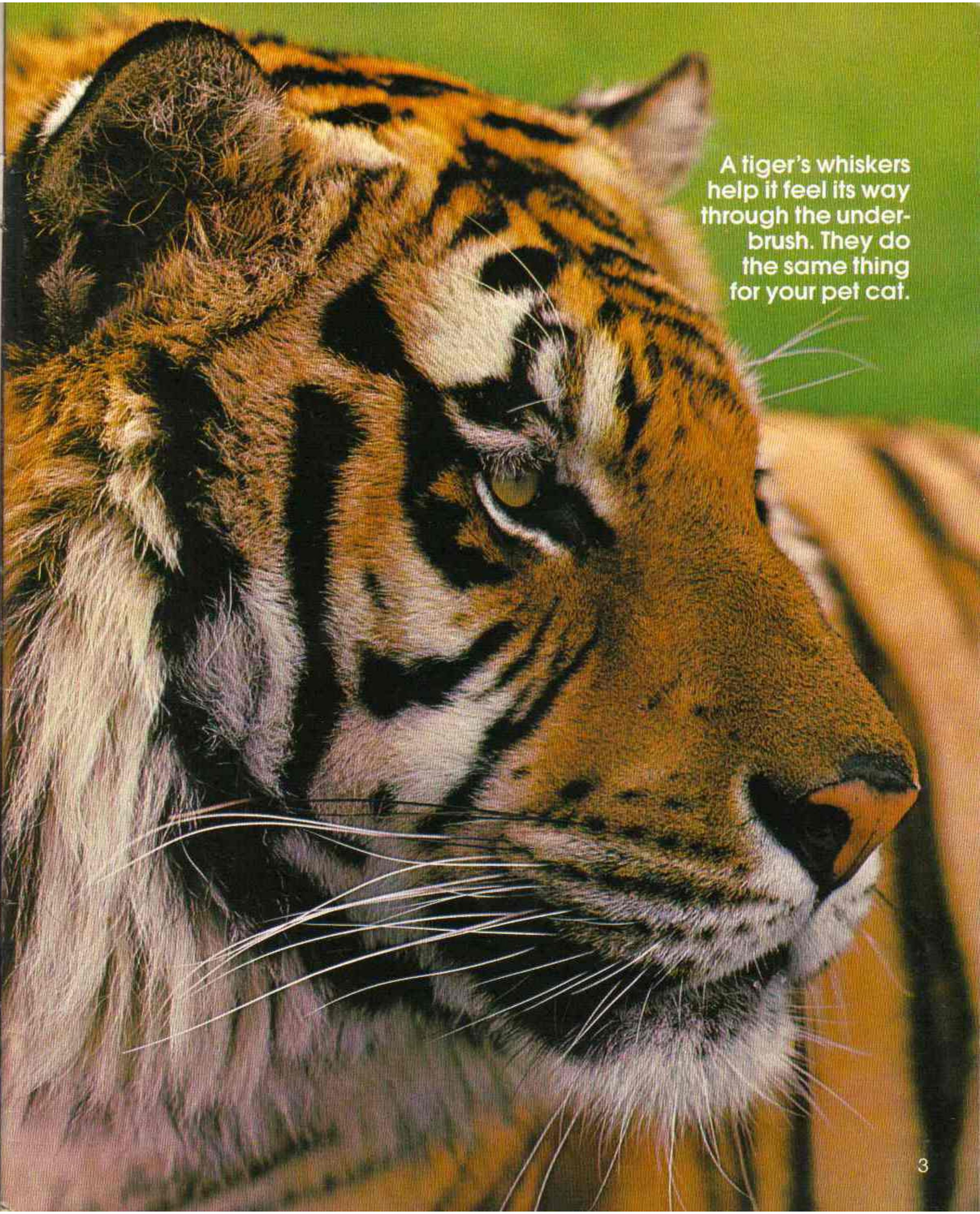

A tiger's whiskers help it feel its way through the underbrush. They do the same thing for your pet cat.

TAME AND TINY TIGER

by Pegi S. Harvey

Silently the cat lifts each padded paw. It creeps forward slowly. When it is close enough, it crouches low to the ground. Its tail twitches with excitement. Patiently it waits for its victim's attention to wander. When it does, the cat is ready . . . *Pounce!*

What kind of cat did you think it was? A tiger? The cat in this story isn't a tiger. It's a pet house cat. It stalks a mouse or bird in exactly the way a wild tiger stalks a deer.

Perhaps you have a pet cat. Did you ever think of your own cat as a tiny tiger? Pet cats are like tigers and other large cats in many ways.

All cats are hunters. They are all born with the instincts and the weapons they need to hunt. But they all must learn *how* to hunt. Most cats learn by playing with things and by watching their mothers.

A mother house cat swats at a cloth ball and makes it move. Then she pounces on

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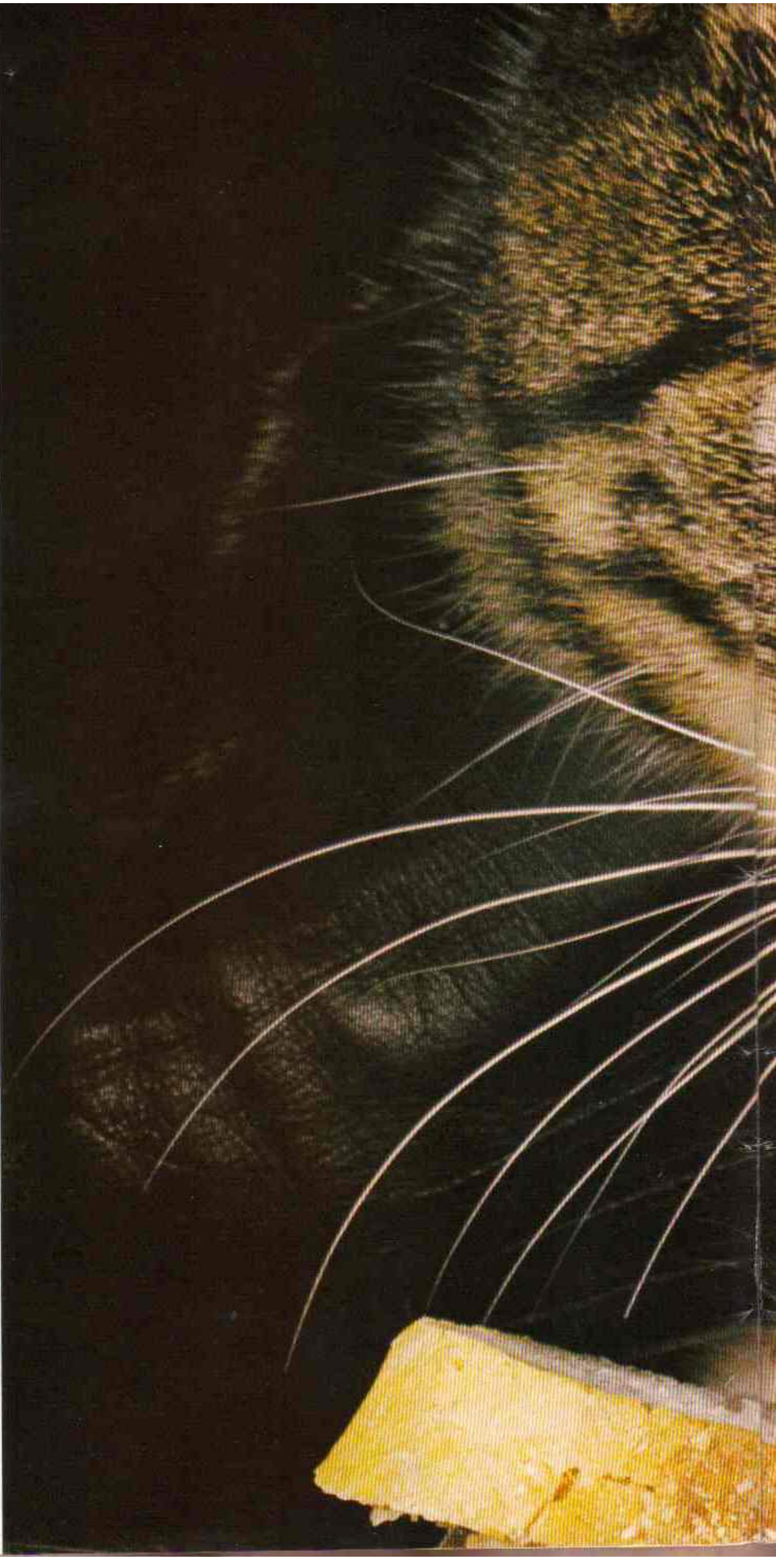
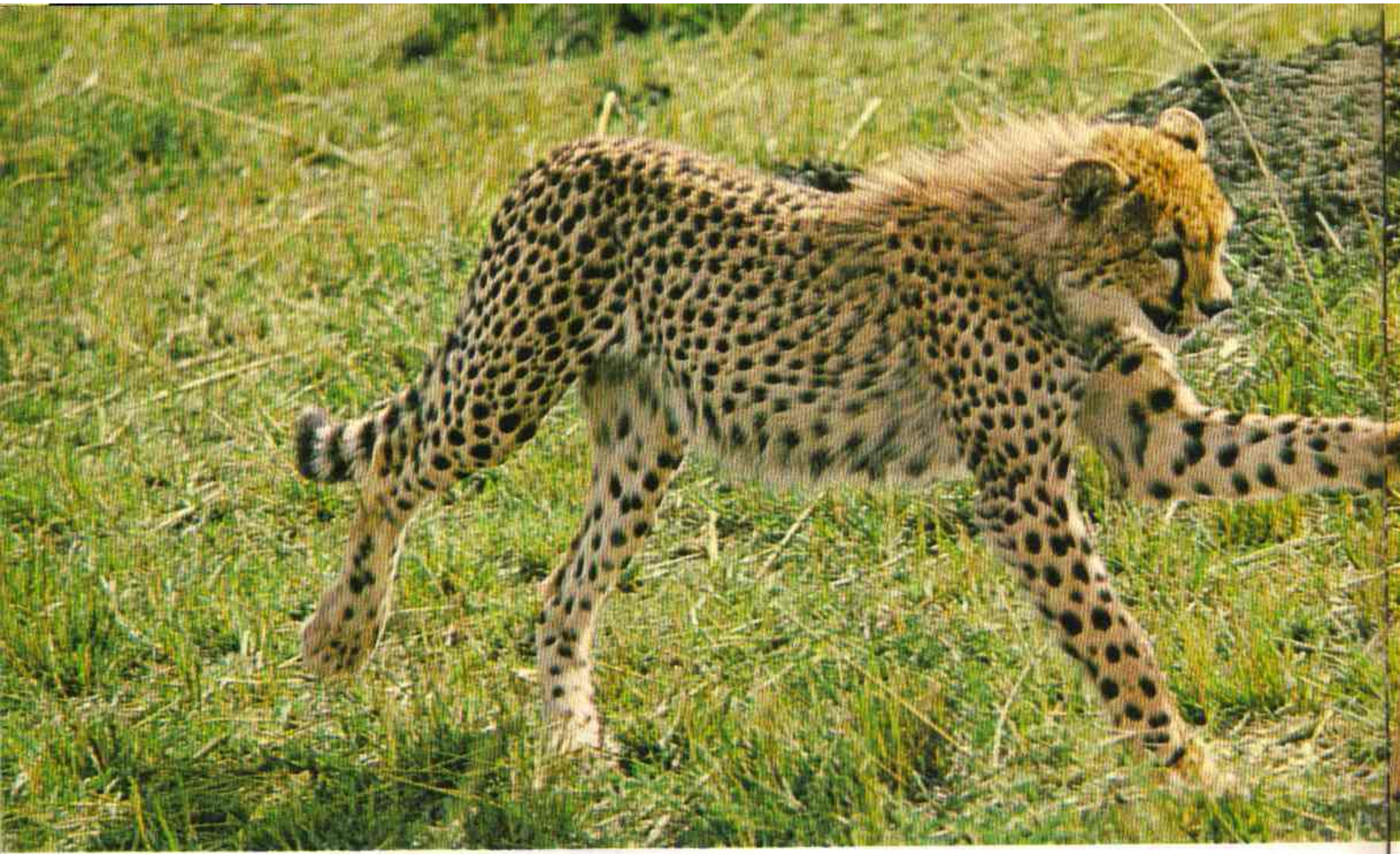


Photos by Lee Foster/Bruce Coleman, Inc. (3); Constance P. Warner



it. Her month-old kittens soon join the game. They stalk and catch the "prey" over and over again. They may also stalk dead leaves, shadows or even each other!

A mother lion switches her tail from side to side. Sometimes she moves her tail slowly; sometimes she jerks it quickly back and forth. Her cubs leap and tumble over one another to catch it. Playing this game is like pouncing on a rolling ball. By practicing to catch the mother's tail over and over, the cubs learn how to catch live prey.

Cats are famous for their special hunting weapons — sharp teeth and even sharper claws. If your cat will let you, look closely at these weapons. They are exactly like those of the largest tiger — only much smaller.

Your cat uses its needle-sharp claws to catch prey. After the cat pounces, it digs its claws into the prey and holds on.

When not using its claws, your cat hides them — just as bigger cats do. The claws are pulled into openings on top of the cat's toes. When they are needed, the cat pushes its claws out with amazing speed. The cheetah is the only cat that cannot completely hide its claws.

Inside your cat's mouth are four long, extra-sharp teeth called *canines (KAY-nines).* All cats use these canine teeth as the last step in killing their prey. Cats usually bite the back of their prey's neck. Only on very large prey do they bite the throat. The Cheetah is different. It bites the throat almost every time.

Other parts of your cat's body are like those of the larger cats too. Eyes and ears are very important to your pet, just as they are to its larger relatives in the wild.

Watch your cat as its eyes follow an insect. The cat

Photos by Dr. E. R. Degginger

ALL cats stalk and catch prey. For your cat it's a bouncing ball, but for this cheetah it's a gazelle.

doesn't lose sight of the tiny creature for a second — though you may need minutes even to see it! Like those of the larger cats, your pet's eyes are made to detect movement. They are also good at judging distances and seeing in dim light. All of these features help a cat to be a better hunter.

While you crumple a piece of paper, watch your cat. Its ears turn to pick up even the tiniest noise. All cats turn their ears toward a sound. It helps them sense danger and find prey.

Cats are also alike in the ways that they tell their feelings. A pet cat purrs when it's happy and contented — so do ocelots and cheetahs. A pet cat hisses when it's afraid — so do lynxes and mountain lions. A pet female cat howls to attract a mate — so do bobcats and cougars.

Sometimes cats don't use their voices to tell how they're

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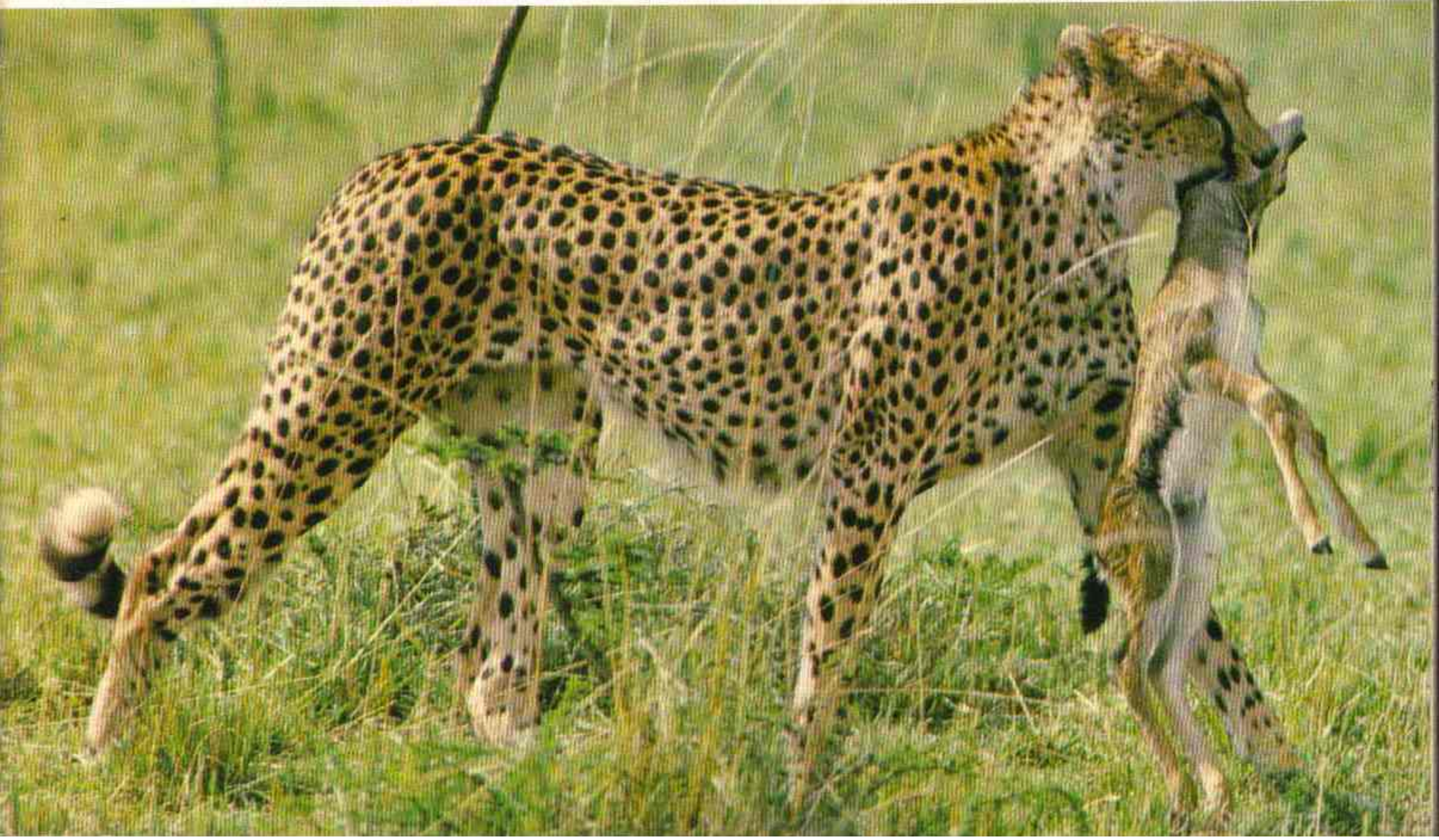


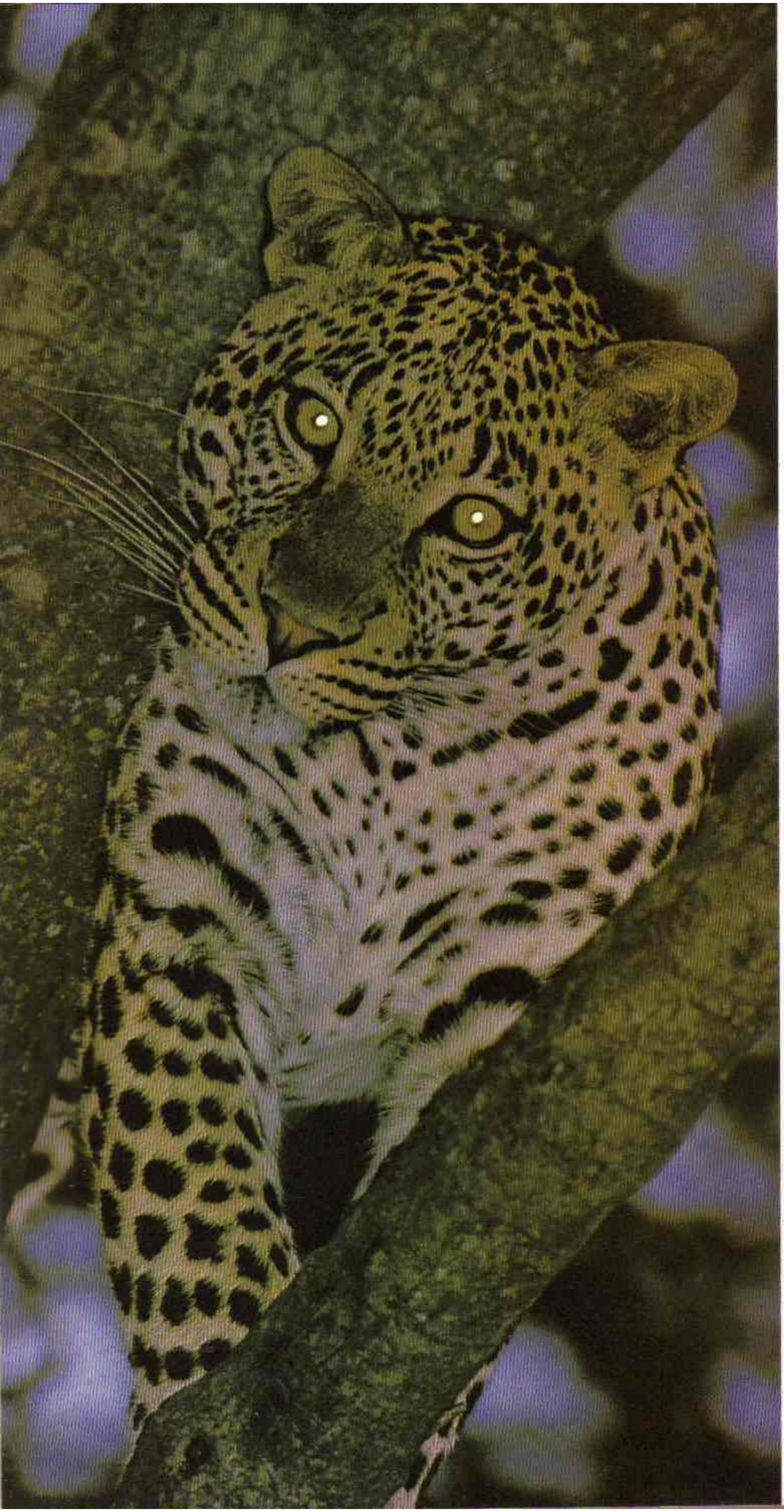


Photo by Russ Kinne/Photo Researchers

WILL your pet's eyes glow like this leopard's when you shine a light at them?

feeling. Instead, they use their bodies in special ways. Just picture a cat with its ears flat against its head, its eyes glaring and its tail swishing. You can easily guess the mood of this cat — anger! When angry, a jaguar uses its body in this way to say: *Stay away!* So does your pet.

A male leopard sprays a tree, then stands on his hind legs and rakes the tree with his claws. He's using his body to say: *This is my territory.* When your pet cat claws at its favorite armchair, it is doing the same thing.

Lions in the same pride, or family group, rub their heads together when they meet. This is a friendly greeting. Your pet may like to rub its head against your legs or hands. It uses scent glands around its mouth and cheeks to mark people it trusts. This is its way of saying: *I like you; you're my friend.*

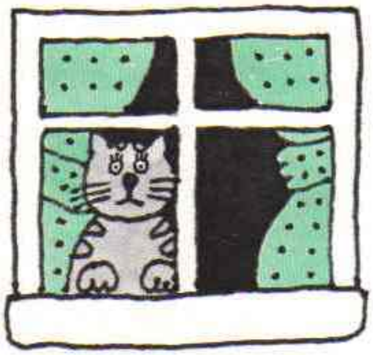
All cats are very much alike except for their size. So you can learn many things about the big cats just by watching a small one — the tame and tiny tiger in your house.

The End

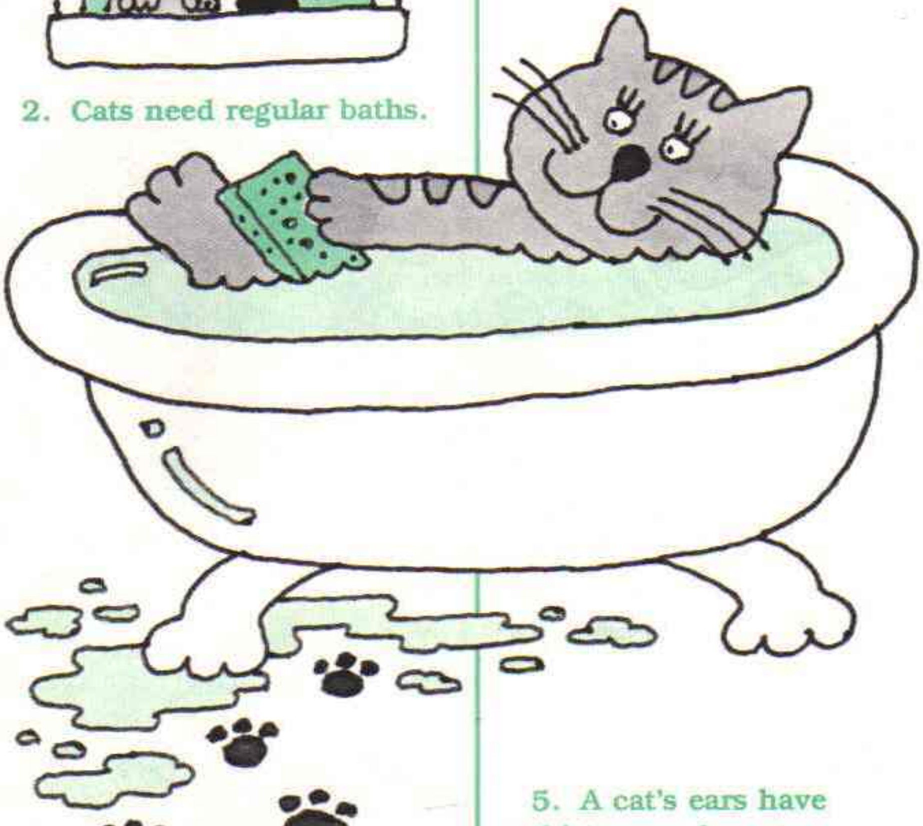
CAT QUIZ

Try this "True-or-False" quiz and see how much you know about cats.

1. A cat can lead a happy, healthy life without ever going outdoors.



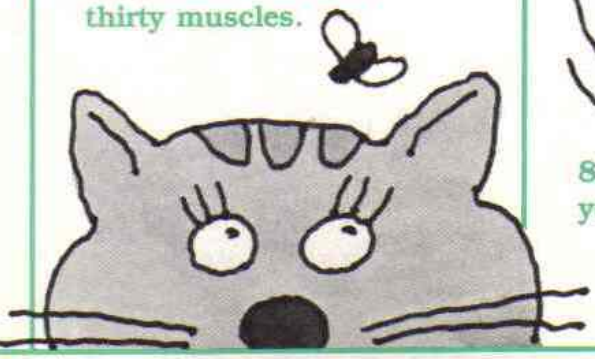
2. Cats need regular baths.



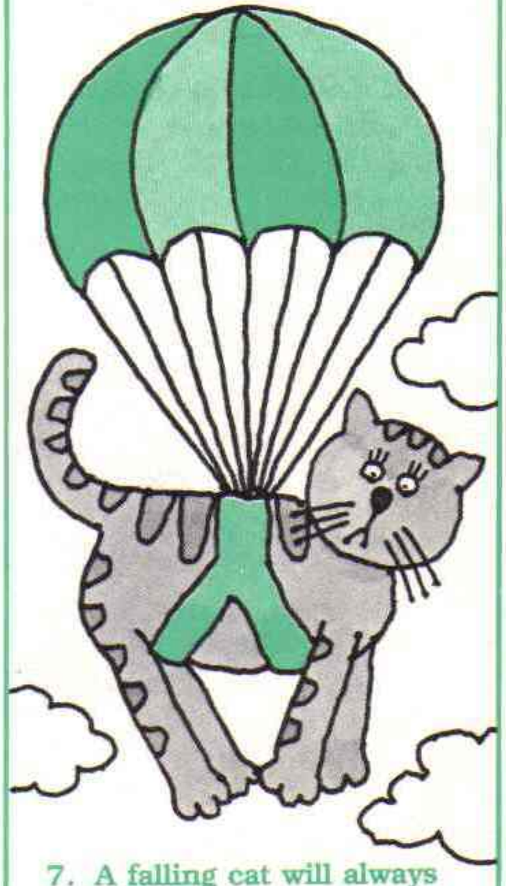
3. Short-haired cats never need brushing.

4. Siamese kittens are white when they are born.

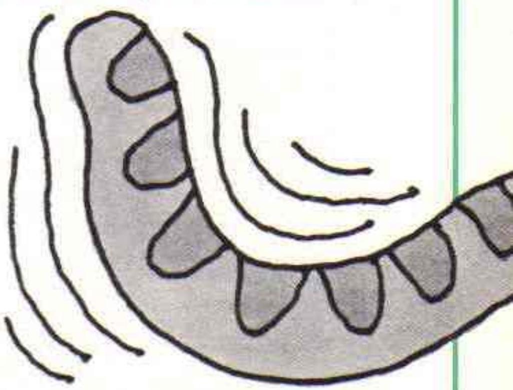
5. A cat's ears have thirty muscles.



6. Cats can be trained.



7. A falling cat will always land safely on its feet.



8. A cat uses its tail to tell you how it feels.

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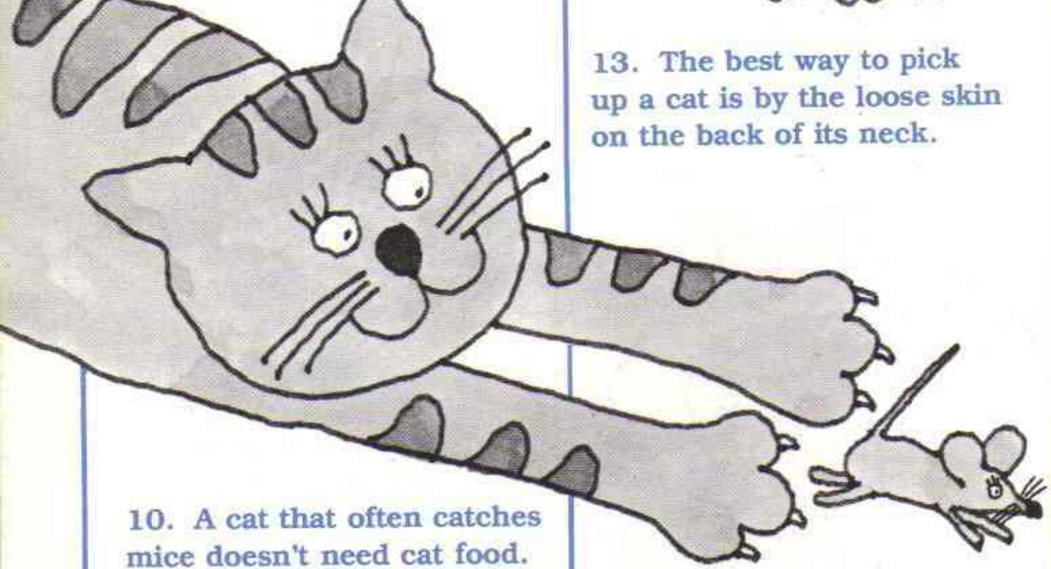
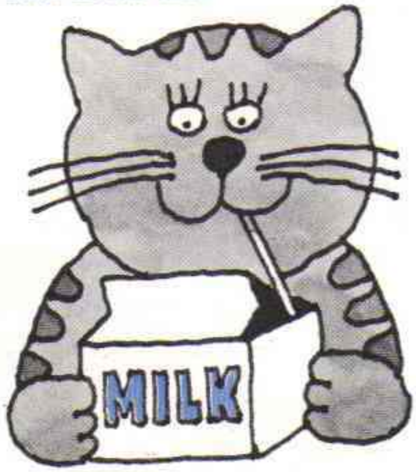
9. Cats should be fed mostly fish.



10. A cat that often catches mice doesn't need cat food.

11. A cat that eats grass isn't getting enough vegetables in its diet.

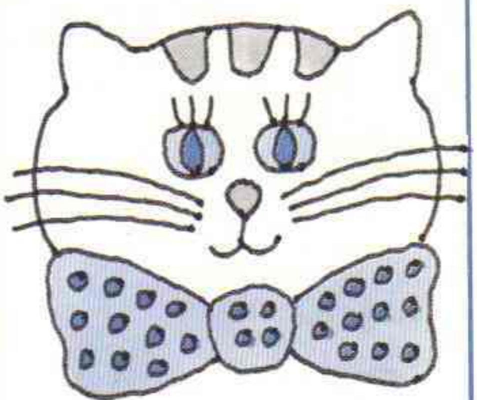


12. Cats need milk.

13. The best way to pick up a cat is by the loose skin on the back of its neck.

14. A stray or abandoned cat usually lives for only a week or two.

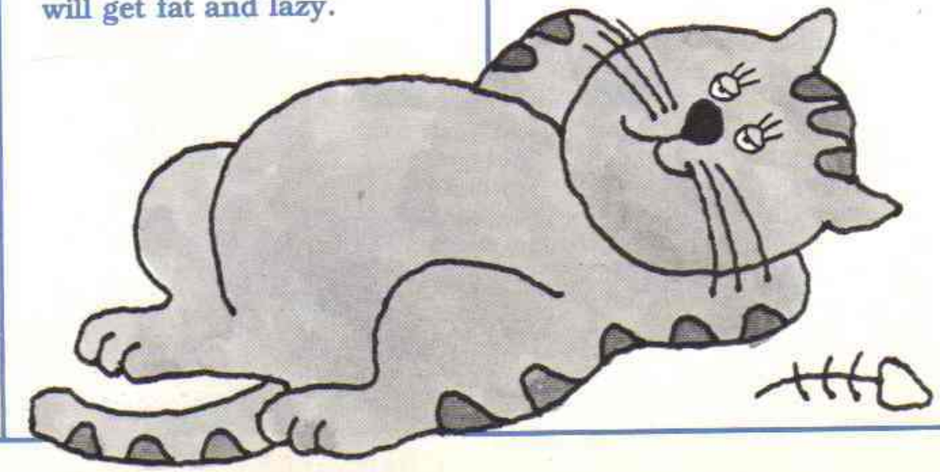
15. A cat that is spayed will get fat and lazy.



16. Almost all kittens have blue eyes.

17. A ball of yarn makes a good toy for a kitten.

18. A cat's whiskers help it "see" in the dark.



ANSWERS

by Beverly Armstrong

1. True. A cat can get plenty of exercise indoors, and it is usually safer there than outside.

2. False. Cats can usually keep themselves clean by licking their fur with their tongues.

3. False. Cats need and enjoy occasional brushing.

4. True. The dark color on ears, face, paws and tail develops later.

5. True. The thirty muscles enable the cat to twitch or flatten its ears.

6. True. Cats are more independent than dogs and therefore less trainable. But they can be taught to walk on a leash and do simple tricks. Start the training at an early age.

7. False. Though cats can sometimes twist around in midair and land safely, they are often hurt or killed by a fall.

8. True. A swishing tail means anger. A tail held up straight means the cat is content. A tail curled around its body indicates fear or nervousness.

9. False. Too much fish is bad for cats, and may cause convulsions, paralysis or death.

10. False. Even if it were able to catch enough mice to live on, it would not be getting a balanced diet.

11. False. Cats may eat grass because they like the taste, or because they need to bring up something they have swallowed. Grass may wrap around a sharp object in the cat's stomach and protect the throat as the object is vomited.

12. False. Although some cats enjoy milk, they do not need it in their diet. Milk makes many adult cats sick. Milk is not a substitute for water.

13. False. Use two hands to support the cat's body. Hold it close to you.

14. True. Homeless cats always live in danger. Most are killed by cars, dogs, poison, thirst or starvation.

15. False. Spaying won't affect a cat's weight—overfeeding will! Spayed cats that are well cared for, stay slender and active.

16. True. The gold, green or orange develops as the cat grows up.

17. False. Although kittens enjoy playing with yarn, they can easily get tangled in it and strangle to death. Sometimes they swallow the yarn, which can make them very sick.

18. True. They are very sensitive and act as "feelers" to let the cat know when it has touched something.

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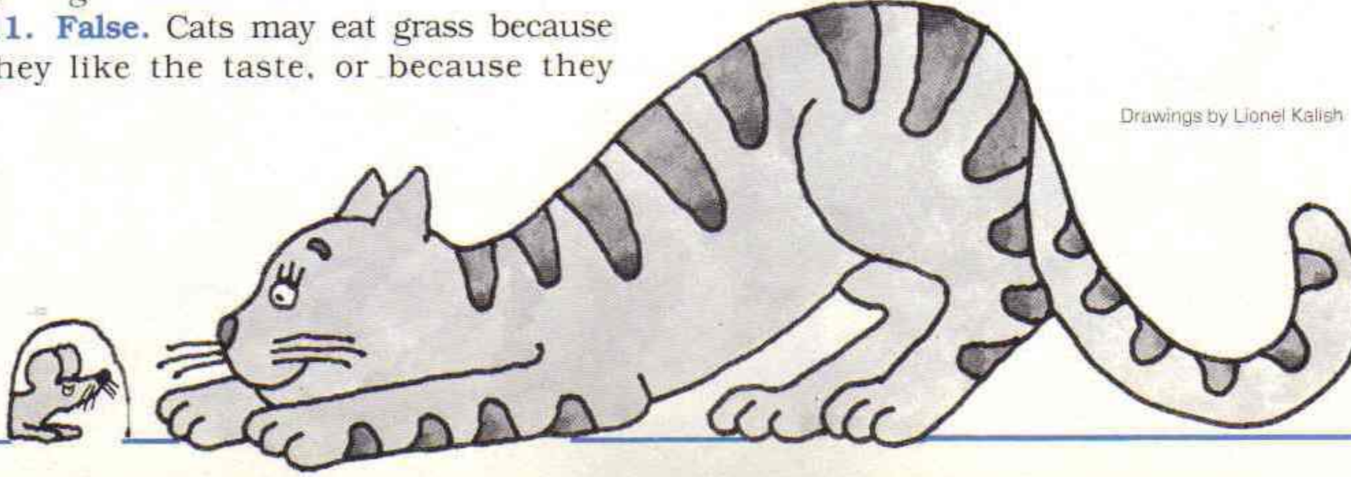


Drawings by Lionel Kalish

Meadow mystery

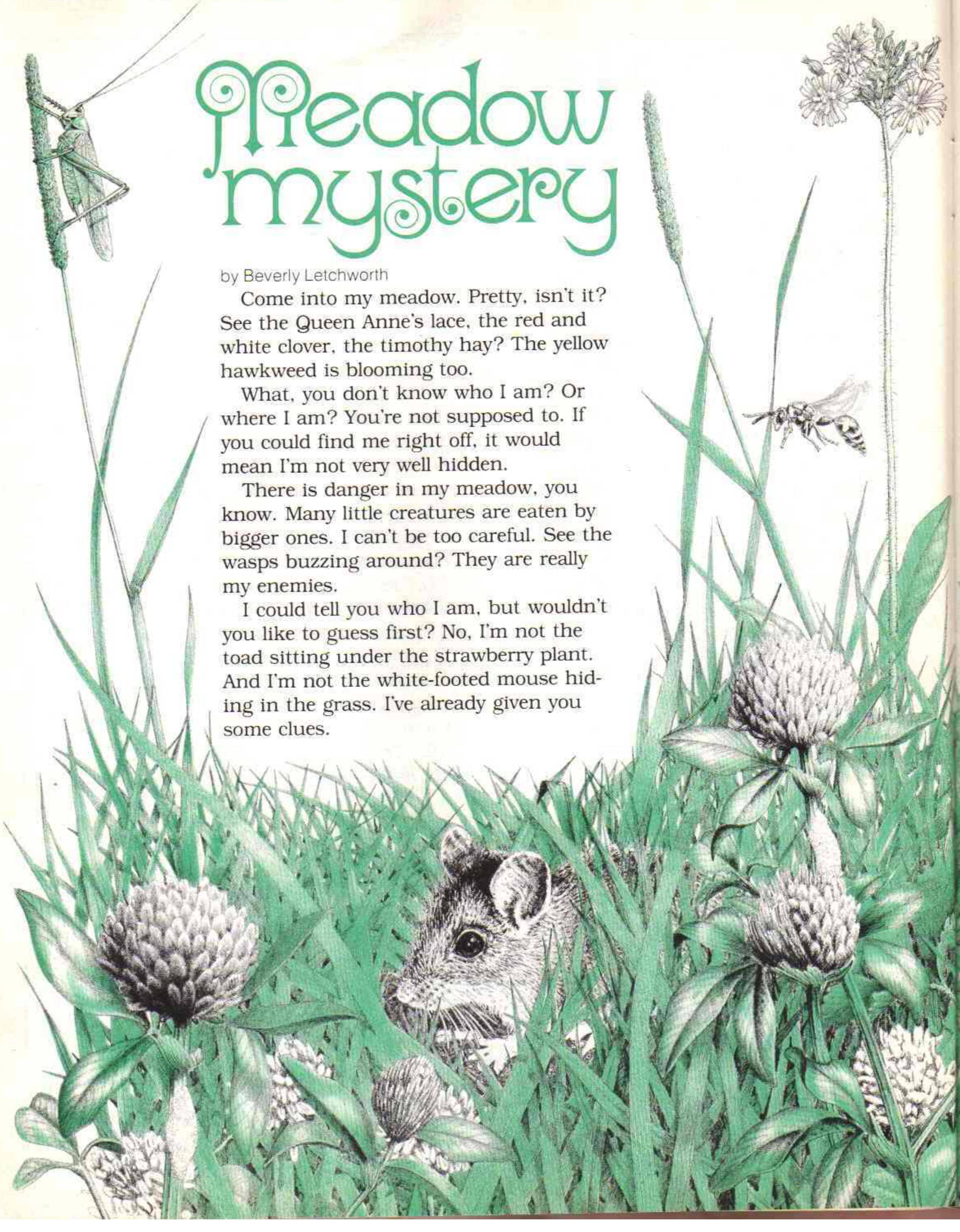
by Beverly Letchworth

Come into my meadow. Pretty, isn't it? See the Queen Anne's lace, the red and white clover, the timothy hay? The yellow hawkweed is blooming too.

What, you don't know who I am? Or where I am? You're not supposed to. If you could find me right off, it would mean I'm not very well hidden.

There is danger in my meadow, you know. Many little creatures are eaten by bigger ones. I can't be too careful. See the wasps buzzing around? They are really my enemies.

I could tell you who I am, but wouldn't you like to guess first? No, I'm not the toad sitting under the strawberry plant. And I'm not the white-footed mouse hiding in the grass. I've already given you some clues.



Drawings by Peter Zallinger

I am small — much smaller than a toad or a mouse. All around the meadow there are thousands of my kind. I'm not full-grown yet. When I am grown up, I'll be one of the best hoppers around. I'll be able to land on your hand when you walk through the meadow, then leap off so quickly you'll never find me again.

A grasshopper? Wrong! I knew you'd think that! But don't get huffy. You're on the right track. I am an insect, but not a grasshopper.

You say you still can't see me? Well, I'm hiding. Look closely at the red clover plants around you. What do you see?

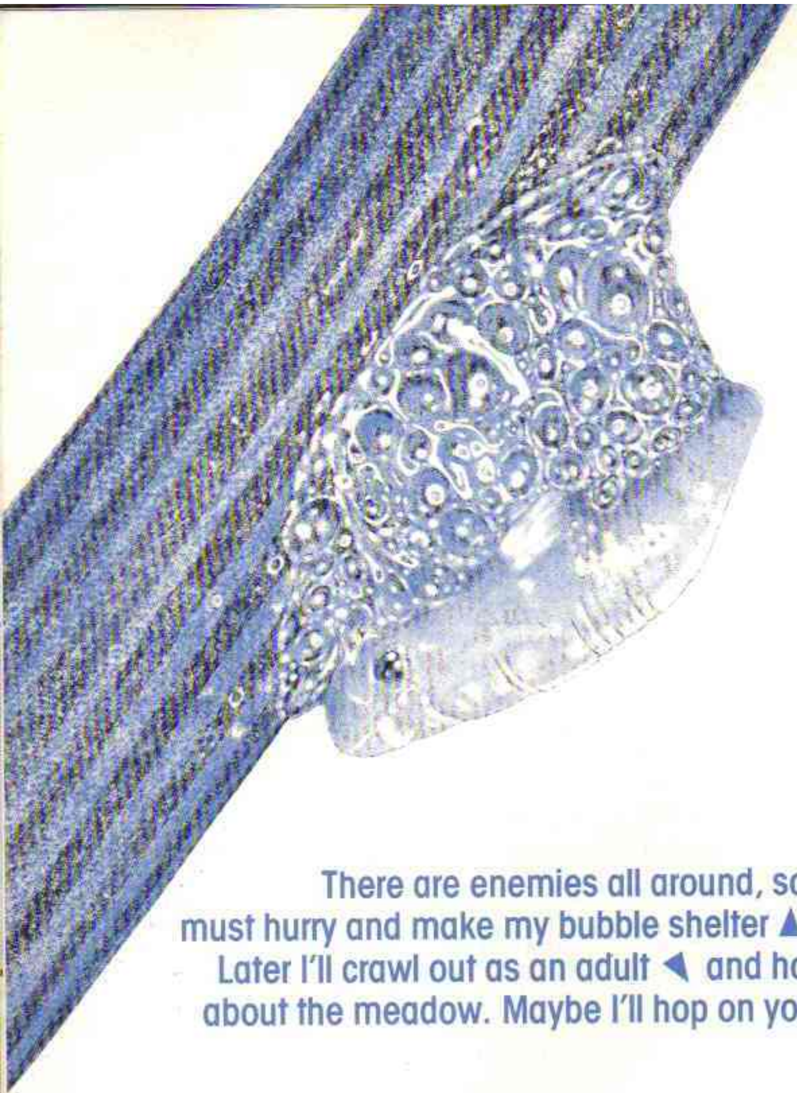
Well, I have to give you more credit. You're right. You see a little blob of white foam. That's my shelter. I built it. Isn't it grand? I hide in here. It does protect me from the sun and keeps me nice and moist, too.

Do you see me inside? Of course not! Take a plant stem and try to find me. Yes, the bubbly stuff is sticky. It helps my shelter hold its shape. You see, I stay on plants and suck the juices from them. Most of this sap passes right through me and comes out my tail end as a special liquid called honeydew. Then I blow air into the honeydew until it becomes a bubbly foam.

I can feel you poking around, but you haven't found me yet. Isn't my foam great protection? If you were a wasp flying over me right now, you wouldn't be able to see me through the thick foam. Even if a wasp did strike, chances are it would miss, because I would have skittered to another part of my shelter.

Okay, I'll stop moving now so you can find me. Careful, now. Let me crawl out on the stem.

Please turn the page



There are enemies all around, so I must hurry and make my bubble shelter ▲ . Later I'll crawl out as an adult ◀ and hop about the meadow. Maybe I'll hop on you!

I guess I'm not much to look at — just a yellow insect, only as long as a grain of rice. Didn't my bubbly home give you a clue? I'm a *spittlebug!* Some people call me a *froghopper.*

Right now I'm still growing. I am a *nymph.* As an adult I'll be bigger and have wings. Then I'll leave my foam shelter to hop around the meadow.

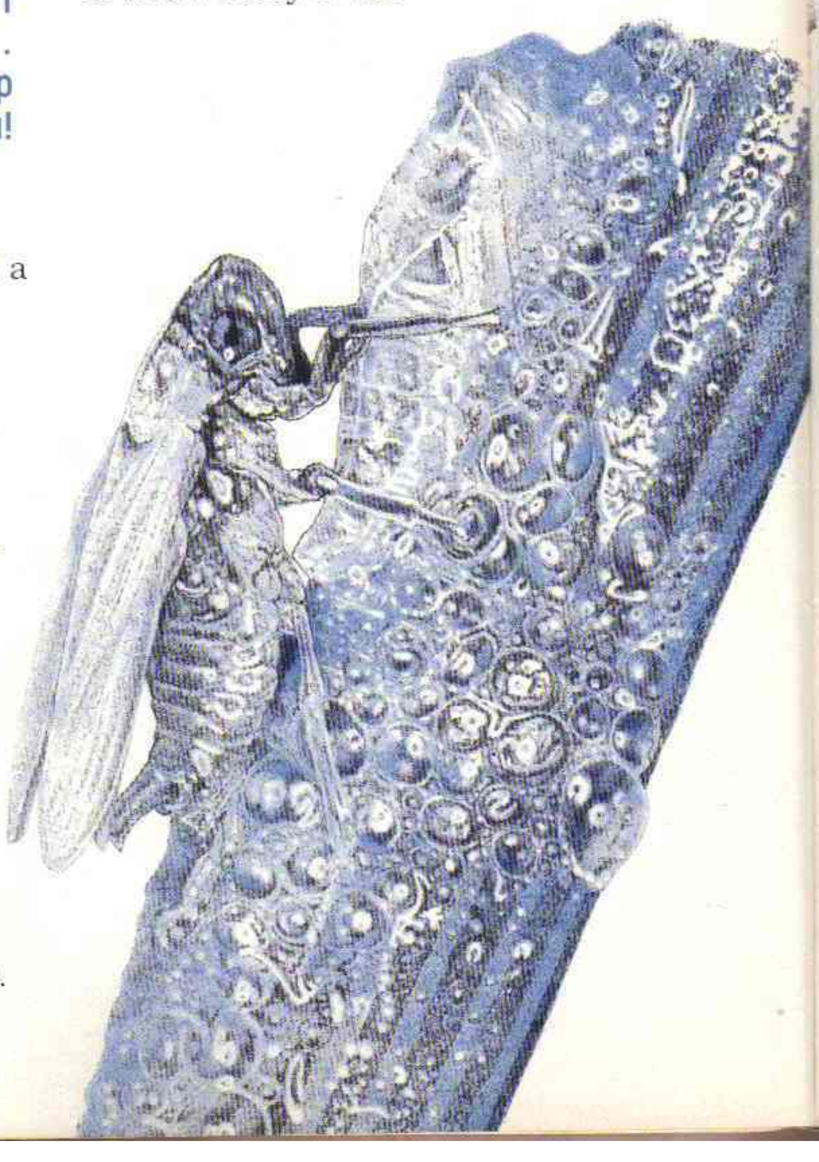
In the fall we spittlebugs lay eggs that won't hatch until spring, when a new crop of spittlebug nymphs arrives. Next summer there will be more bubbly homes all around the meadow.

Please put me back now. I feel very uneasy out in the open. In just a minute I'll be buried deep in my foam again. Do you see some of the other homes of my neighbors? Look on the clover plants. Yes, there are lots of us spittlebugs here in the meadow.

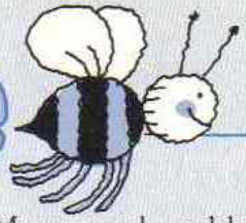
I'm afraid you're right. Sometimes we spittlebugs *do* cause trouble in gardens, orchards or hayfields. Sometimes we hurt the plants we are feeding on. But usually we are just a small part of the meadow community.

Well, it's been nice meeting you. You've been very gentle and kind with me. And you were patient with my little game of *guess who.*

If you'll excuse me now, I would like to finish my dinner. Come back in a few weeks when I'm grown, and I may jump on your hand as you walk by. Or maybe another spittlebug will find you. With a little luck and a sharp eye, you may get to know many of us. *The End*



Happy bee



Many kinds of animals are in trouble. But all across the continent there's new hope for others.

- **In Texas,** along the Gulf Coast, the insect poison called DDT had nearly wiped out the brown pelicans. The DDT got into the fish that the birds ate. This poisoned the birds and made their eggshells too thin. But since the poison was banned a few years ago, the birds are having much better luck raising young. Now there are over 200 birds — twice as many as last year. That's still not many, but it's a lot better than none!

- **On Long Island, New York,** people are watching for ospreys. Until the 1950's, more of these big fish hawks lived on Long Island's shores than anywhere else on earth. Then DDT started killing them off. But now, like the pelicans in Texas, the ospreys are reproducing fast. One scientist said, "In the next few years we're going to have a *flood* of ospreys."

- **In Michigan** very rare Kirtland's warblers (see *Ranger Rick,* April 1975, page 29) are holding on. To help these tiny birds, scientists are trapping their enemies, the cowbirds. Cowbirds lay eggs in the warblers' nests and crowd out the warblers' eggs. Now, because there are fewer cowbirds, more warblers are hatching.

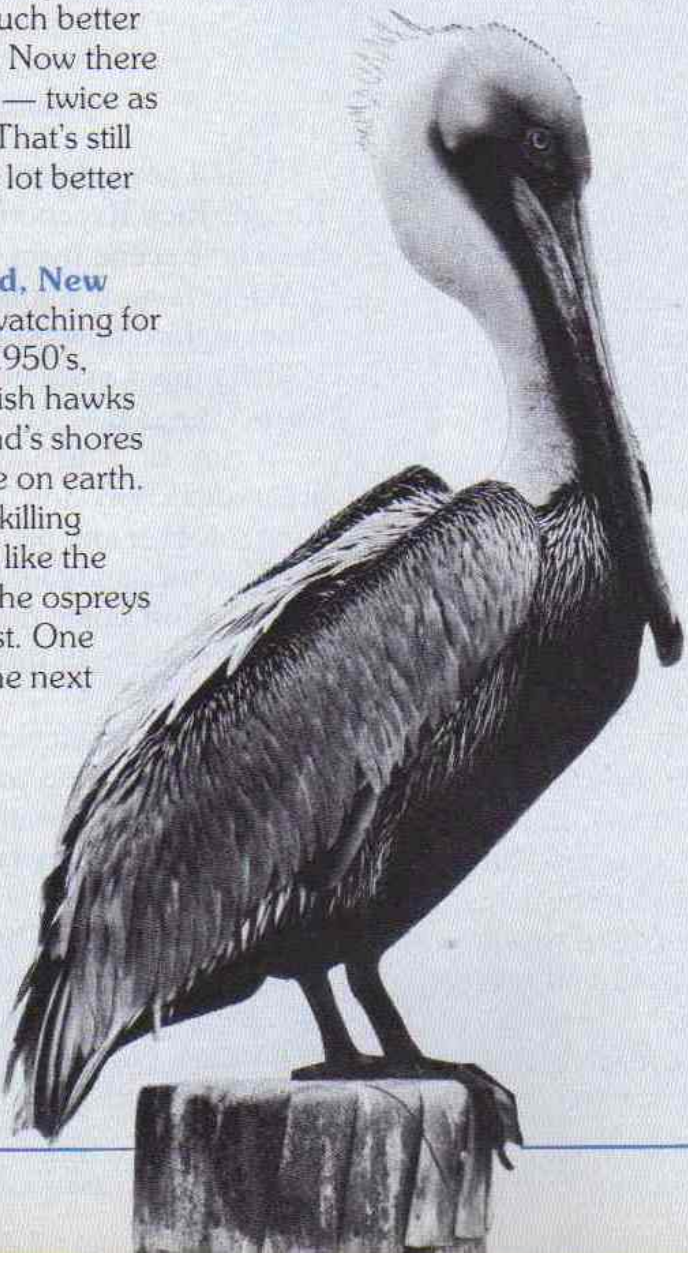


Photo by Leonard Lee Rue, III

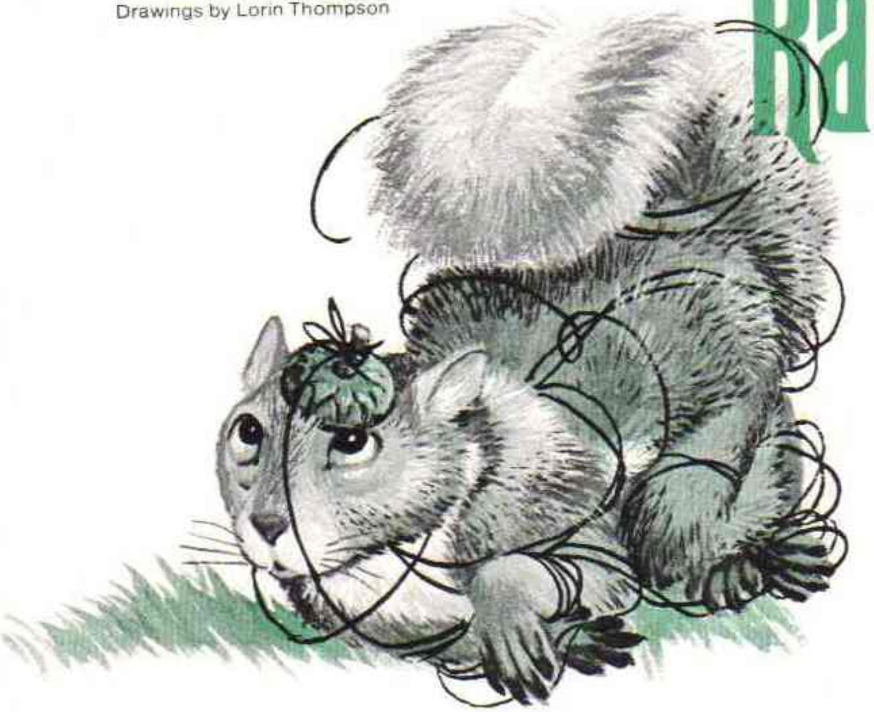
More good warbler news! Bird watchers have spotted Kirtland's warblers where they had never been seen before (or hadn't been seen for a very long time). Two were in Ontario, Canada and two in Wisconsin. Could this endangered species be spreading to new territory?

- **In Puerto Rico** the rare Puerto Rican parrots (see *Ranger Rick,* August 1977, page 21) may now be safe! Scientists have been building nests for them and have been keeping away an enemy bird — the pearly-eyed thrasher. Now, for the first time in years, there are more parrots hatching than dying.

- **In northwestern Minnesota** timber wolves are making a great comeback. In 1974 the wolves living there were finally protected. Since then their numbers have almost doubled.

- **In Virginia** the cry of the cougar may be heard again. In the wildest parts of the state more and more people have been spotting the big cats. Wildlife experts believe the cougar had disappeared from the area years ago. But now, because of protection and plenty of deer to eat, the eastern mountain lion seems to be coming back!

Drawings by Lorin Thompson



Ranger Rick and his friends

Adventure #129 To the Rescue

by Robert A. Brownridge

It was a clear and unusually warm morning. Chester Chipmunk was busy stuffing nuts and seeds into his mouth. Suddenly he spied a king-sized acorn.

"If I don't get that now," Chester mumbled to himself, "Sammy Squirrel will!" He shoved the acorn under his arm and started to run for his nest. Suddenly the acorn was yanked right out of his grasp.

"Hey!" he mumbled. As he reached for the acorn again he saw a long black string tied to the cap. Sammy Squirrel was at it again. *I'll get him,* Chester thought. He quickly pried the cap off the acorn and, giggling, tugged lightly on the cap. Sammy jerked with all his might and went flying head over heels. When he rolled to a stop the acorn cap was on his head and his feet were tangled in the string.

Laughing, Chester ran over to Sammy. "Thanks for the acrobatic act," he said.

"You'll never learn, will you?" chuckled Ranger Rick Raccoon, who had watched the whole scene from his tree hole.

While Sammy untangled himself, Morgan Mockingbird flew down from a tree.

"Isn't this a marvelous day? It's so *warm*!" he said.

"It sure is," said Sammy. "Hey, I have a great idea! Why don't we get some of the gang together and picnic at Pine Tree Lake?"

"That's a dandy idea," called Ollie Otter, who had just come down the trail. "I might even dare some of the others to go for a swim!"

The animals scurried off and in a short time a merry group was hiking through the woods, chattering and laughing together.

About noon, they came to the picnic grove near the lake. They all settled down and began opening their lunch boxes.

Nibbling on some nuts, Sammy Squirrel scampered off toward the lake. He was back in no time. "Boy, Rick, have we found a pack of trouble!"

"*Trouble*?" exclaimed Ollie. "What sort of trouble?"

"There's a sign that says 'DANGER! No swimming and no fishing!'"

"Wow," said Rick. "Everything was all right the last time we were here. Let's take a closer look."

The animals crowded around the edge of the once-beautiful lake and stared in amazement. Thick green clumps floated on the water where it lapped at the beach. It looked awful and it didn't smell very nice, either.

"Look! Look!" shouted Sammy. "What's wrong with those fish out there?"

Dozens of fish were swimming at the surface of the water in the middle of the lake. Their mouths were moving rapidly, gulping air.

"What's wrong with them?" asked Morgan.

"Golly," sighed Ranger Rick, "I think they're having trouble getting oxygen."

"But *why*, Rick?" asked Zelda.

"I'll tell you later, Zelda," said Rick. "Right now, we've *got* to do something for those fish! Help me get that boat over there into the water!"

"Come on, everyone!" exclaimed Ollie. "Let's rescue as many as we can and take them to Shady Pond."

Please turn the page

The picnic was forgotten. Some of the animals grabbed empty lunch boxes and tossed them to Ollie and Sammy, who were sitting in the boat with Rick. Rick rowed out to where the fish were gulping air. Quickly Ollie and Sammy scooped water and fish into the boxes. When the boat was full, Rick rowed ashore. Everyone carried a box and they hurried down the trail as fast as they could go.

Finally all the fish had been rescued and were swimming happily with Billy Bass in the clear water of Shady Pond.

Ranger Rick and Ollie decided to find out what had happened to the lake. They hiked back from Shady Pond and walked along the little stream that fed into the lake. Suddenly Rick stopped.

"Ah-ha!" he shouted. "There's the trouble right there!"

Just beyond them a huge pipe was pouring tons of water into the stream. It was an ugly color and it smelled horrible.

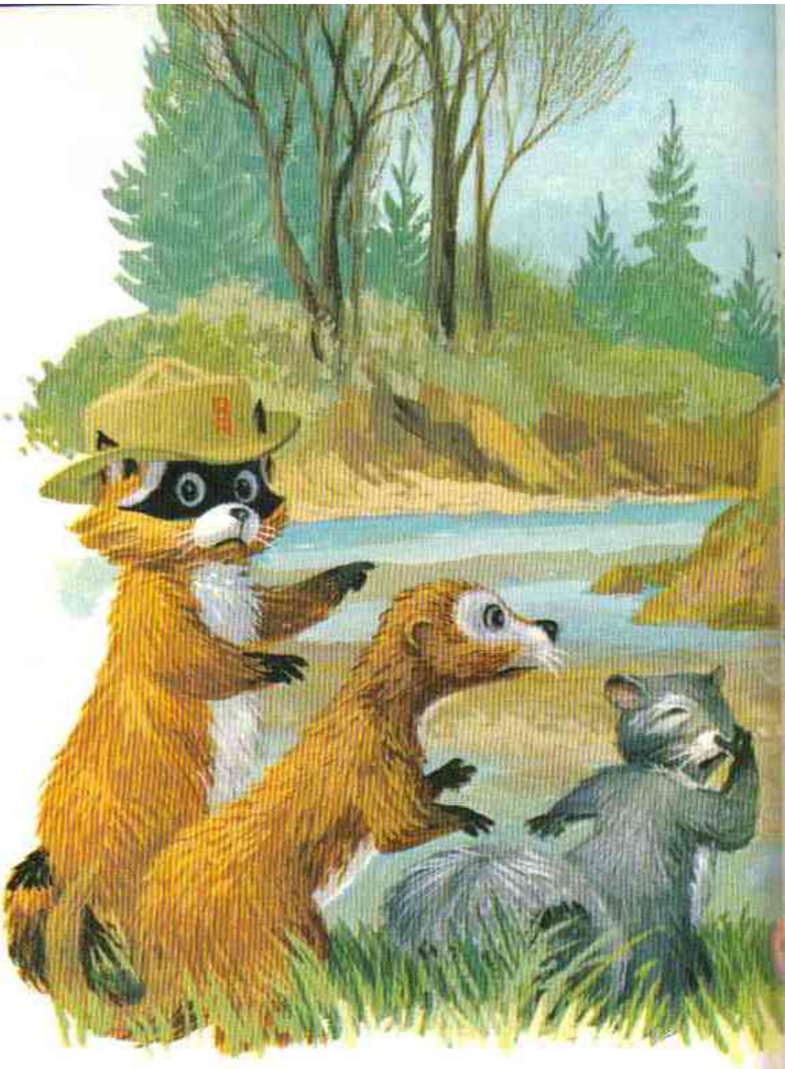
"Sewage!" said Ranger Rick. "This stream drains into Pine Tree Lake and takes the sewage with it."

"But, Rick," said Ollie, "I thought free-flowing water like this stream could clean itself of pollution."

"It can sometimes, Ollie," answered Rick, "if the stream flows far enough and the pollution isn't too bad. But there's too much sewage in this stream, and it doesn't have time to cleanse itself before it enters the lake."

"But that stuff in the lake doesn't look like the pollution here. Where did *it* come from?" asked Ollie.

"The sewage acts as fertilizer and feeds millions of tiny green plants in the lake called algae," answered Ranger Rick. "The algae form clumps that grow thicker and thicker. Soon the algae underneath can't get enough light and die. Then they decay and take oxygen from the water that the fish need. Come on, let's get back to Deep Green Wood. I want to talk with Ranger Tom."



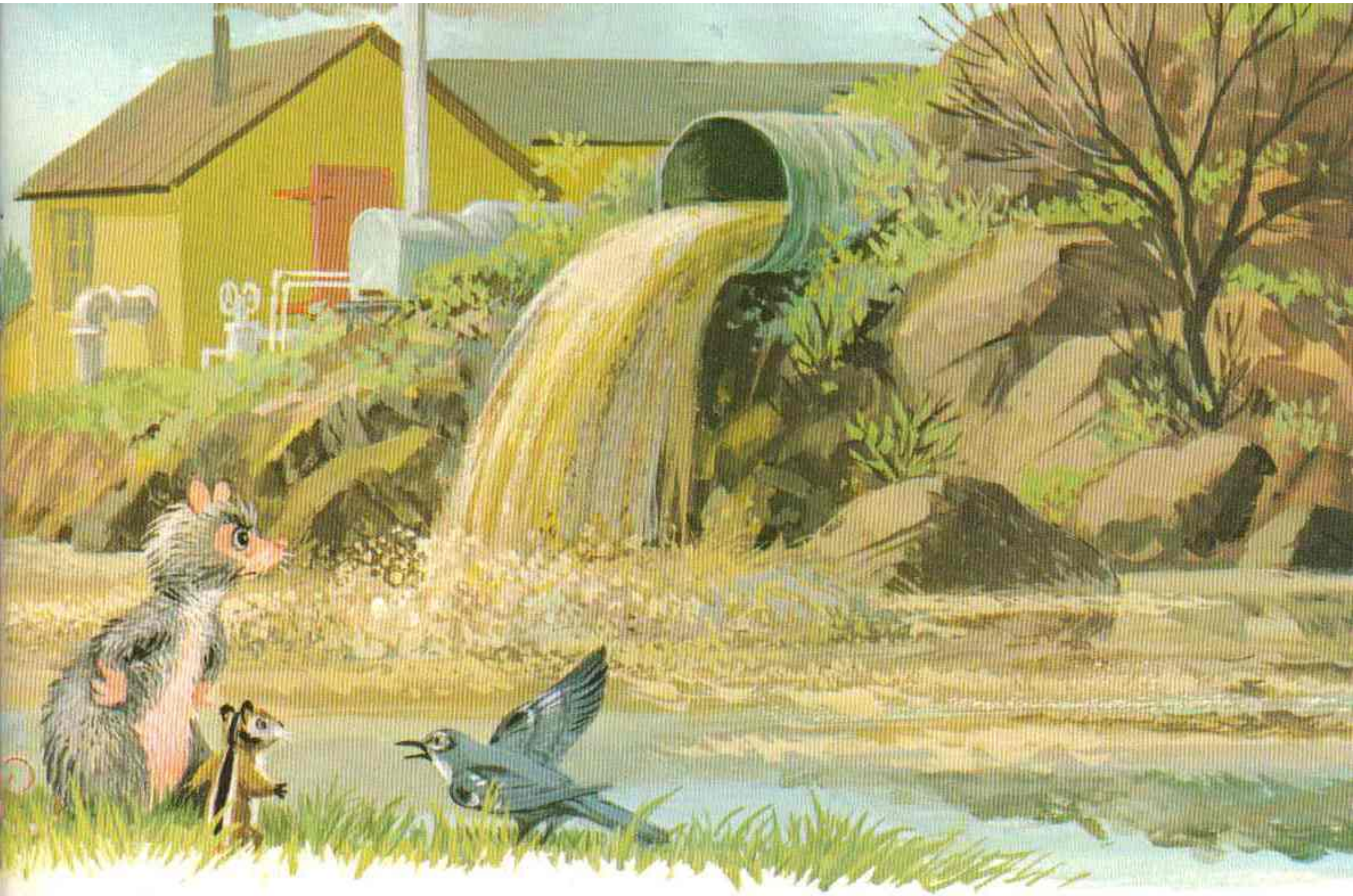
The next day Ranger Rick asked Ranger Tom to explain to the animals about the lake's problem.

"You've probably seen the last sewage being pumped into that stream," explained Tom. "The people of Pine Tree Town finally realized what was happening and were able to get enough money from the United States Government to build a new sewage treatment plant. It will remove all the wastes from the sewage. Nothing but clean water will flow into the stream now."

"Well, I'm glad to hear that," exclaimed Sammy. "Those poor fish were in real trouble!"

"But, Tom," interrupted Rick, "can they get rid of *all* the sewage by treating it?"

"No," said Tom. "There will still be a thick goo called 'sludge' left over."



"But what will the people do with that?" asked Sammy.

"Well, if it's dumped in the oceans it can be a problem," answered Tom. "In some places, millions of gallons a day are dumped into the oceans. Scientists have found that the sea bottom around these dumping grounds is covered with an ugly layer of goo.

"But the people in Pine Tree are going to put their sludge to good use. After the sewage is treated, the sludge will be put into large tanks where it will be broken down by bacteria. Then it's put onto sand beds where sun and air dry it. Once it is dry it will be mixed with leaves and garbage and made into compost. Then the people around here will have a good fertilizer for their gardens."

"That's *great*!" exclaimed Zelda.

"And it's about time that more people realize there are ways to treat sewage and use what has always been thought of as 'waste,'" said Tom.

"But can we clean up other polluted waters?" asked Sammy.

"Why not?" asked Tom. "Some of our lakes and streams are already beginning to come back to life. Even Lake Erie, which was dying not too long ago, is becoming healthy again."

"Well, I sure am glad to hear that!" said Ollie. "I love the water and I don't want to swim in water like we saw at Pine Tree Lake."

"Don't worry, Ollie," laughed Ranger Tom. "Now that the sewage treatment plant is working, Pine Tree Lake will be as clear as Shady Pond. And when it is, all you'll have to worry about is taking back all those fish you rescued!"

The End

Nature Club News

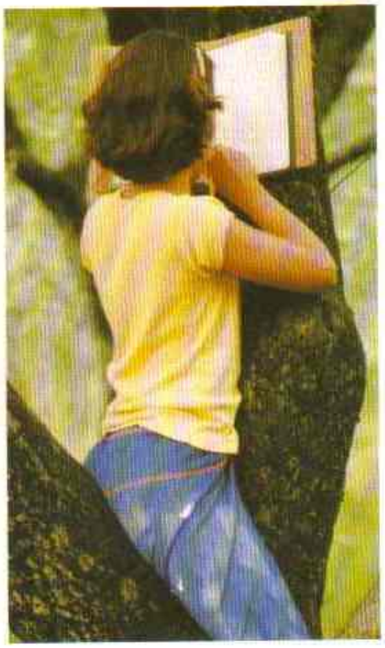
A MAGIC TIME

What's Ranger Rick up to in Emmaus, Pennsylvania? Mary Liz Bauer heard something exciting was going on and one fine August day she went to find out what it was.

No, she didn't meet Ranger Rick himself. But she did meet a bunch of keen campers at a Ranger Rick Day Camp. The camp is held in the summer by the Lehigh Valley Conservancy. During the school year the Conservancy runs two busy Ranger Rick Clubs. This is what Mary Liz heard from Jill Langsam, one of the campers and club members:

"In August I went to the Ranger Rick Day Camp for two weeks. Usually I attend our Ranger Rick club meetings for outings and hikes and projects. But day camp is different — I didn't know what to expect.

"I arrived at a big old farmhouse. There was a barn, meadows, woods and a small river. When I saw many new faces I felt shy. And the other 23 kids looked a little shy too. They had signed up for day camp, but not all of them had been club members through the rest of the year. Soon our leader helped us get acquainted. The youngest campers were eight, the oldest were eleven. At ten I was about in the middle.



Hey—what's up? Ranger Rick's Day Campers find nature's magic—even up in a tree.

"That first morning we introduced ourselves to the environment. We each got a nature logbook and began to explore.

"Later that day we each found a Magic Spot — a special place where each of us could be alone for a while. Actually, I think my Magic Spot found me. It was in a tree — not too high up, not too far down. I liked being up a bit so I could see the birds in the trees and the flowers on the ground. I also had time to write in my logbook.

"When we came back to camp the next day we really began studying nature. We made bug cages out of milk cartons, screen and plaster of paris. Then we searched for insects to put in the cages. My friend Greg caught a monarch butterfly. Our nature club had been on a butterfly count in the spring so we knew the names of many of those we caught. I also found two ladybugs and another beetle. We watched them closely for a while, then set them free. I like bugs, at least to look at. When I'm in a good mood I can even pick up a daddy longlegs!

"One day we talked about using all of our senses. We went on a hike blindfolded. We held onto a string with one hand and reached out to feel things with the other. I soon felt that the grass was soaking wet. After four days of rain, the warm sun on my back sure felt good. I also heard a robin and a cricket that seemed to be having a singing contest! I ran into a prickly bush, a flower and some other kids. Everything smelled fresh and grassy. Afterwards some kids said they had felt a little scared. But I thought it was an adventure.

"Later we formed groups and studied life on — and in — a log. I never thought you could learn so many things from an old log. We also noticed how rotten the log was. Soon we discovered insects, worms, centipedes, millipedes, snails, slugs, spiders and all kinds of other small creatures. Fungus was growing on it and some ants were making their home in it too. My group figured out that our log came from an apple tree. How did we know? Because it was in the orchard and had the same bark as the live apple trees. Even though it had fallen down it still had its roots.

▲ Ever been kissed by a butterfly? It tickles! You can "see" even when you hike blindfolded. ▼

"On Animal Day we had a guest named DeeDee. She was small and grayish-brown and wore a furry black mask. Her paws were like hands and she had black rings on her tail. I'm sure that you know what she was. Maybe she was one of Ranger Rick's cousins!

"One of my favorite days was when we explored the stream. We had nets and waded right in. The water went over the tops of my boots but I didn't care. The

Please turn the page

Photos by Kenneth A. Friedman

A chat with a young raccoon is a good way to start camp.

coolness felt good. Besides, I was busy trying to find some animals. Last winter when our Nature Club studied the same stream we had to break the ice to dip our nets. We didn't catch much that day!

"It didn't take long to find animals now. I turned over a big rock and a two-inch crayfish scooted out backwards. I was glad to have had the net — those claws looked as if they could really pinch!

"When we all got together on the bank we put our finds in a pan of water. We had ten crayfish, five leeches, a snail, a water beetle, and a bug called a water boatman. We watched how they moved in the water. Some animals swam quickly; others just 'oozed' along the bottom of the pan.

"The very best part of camp was our overnight camp-out. By then we all knew each other well and were good at working together. It didn't take us long to get our sleeping bags set up in the tents. Then we all helped to cook supper. I made lemonade.

"When the sun had gone down, it started to get dark. Then we hiked up to an open field and shared another magic time. There was a full moon. All the crickets and katydids were singing away. There was a warm, soft breeze. We looked for shooting stars, but the sky was too hazy to see any.

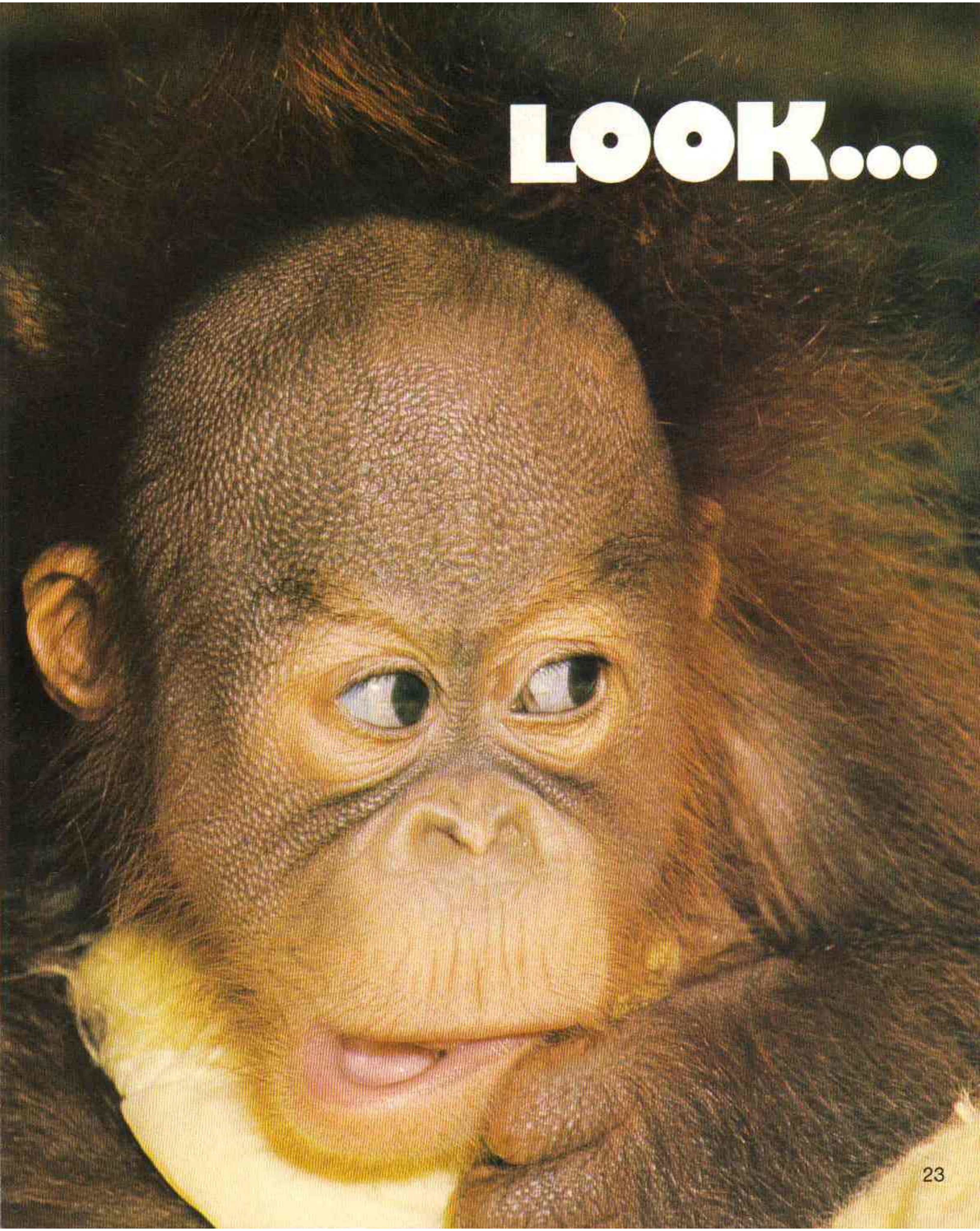
"We found the North Star and the Big Dipper. We wondered how the faraway stars really look. We also wondered what people long ago thought when they looked at the stars. Even though we knew the campfire was waiting for us, it was hard to go back to our tents.

"I had a wonderful two weeks. I made some new friends. I got to know nature in a new way. I know why everyone should help to preserve our wild places. I was glad to know that many of the kids were signing up for Ranger Rick Nature Club meetings in the winter too. And we're all coming back to day camp next summer for more of nature's magic."

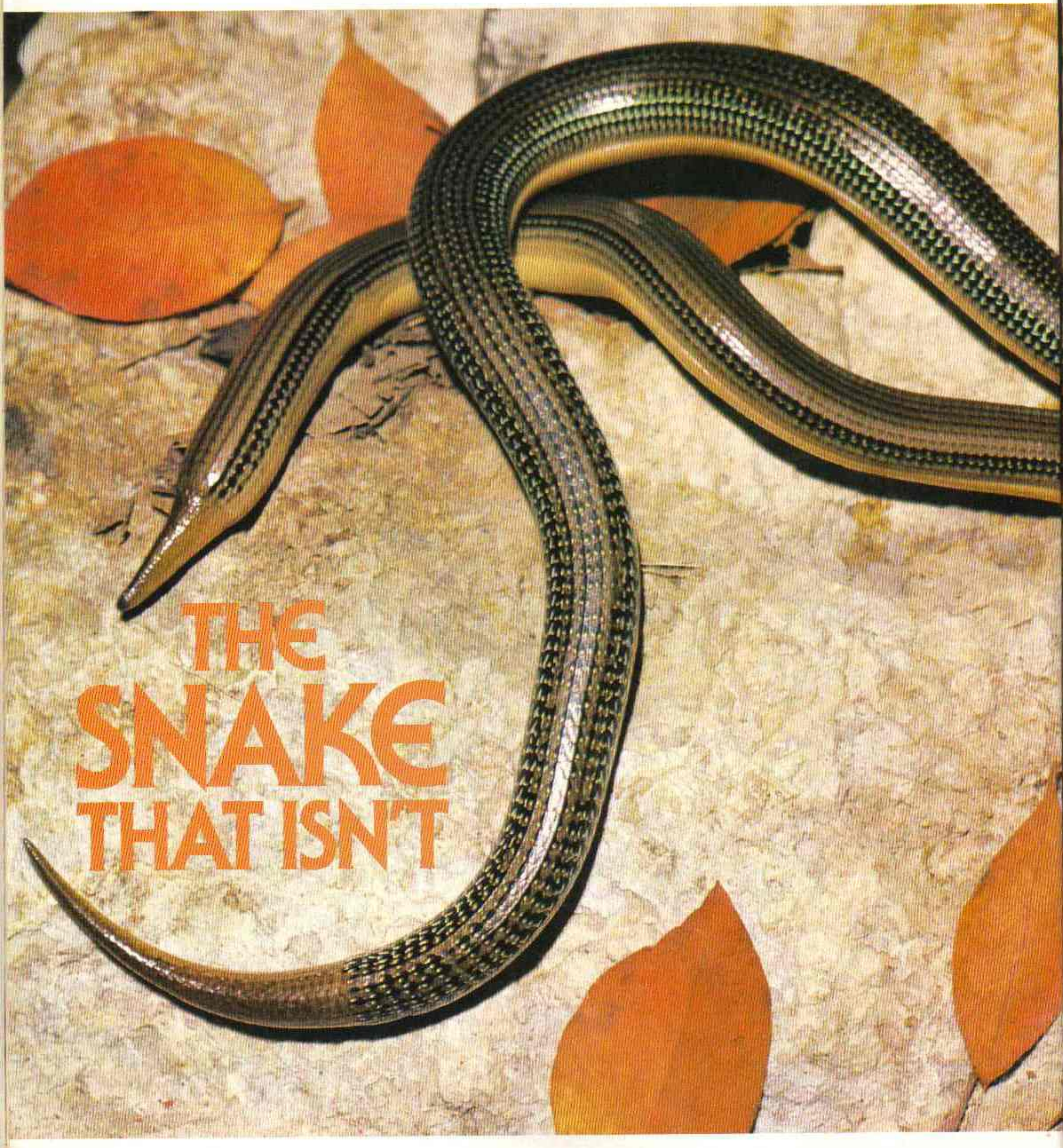
CLUB MEMBERS AND LEADERS:

Wouldn't it be fun if your entire nature club could attend a nature day camp? Check to see if a nature center or parks and recreation department in your area sponsors a day camp. If there is one nearby, plan a nature club project to pay part or all of the camp fee for each nature club member. *R.R.*

Photos by Marilyn K. Krog; M. Austerman/Animals Animals (24)


LOOK...

...an orangutan tangle



THE SNAKE THAT ISN'T

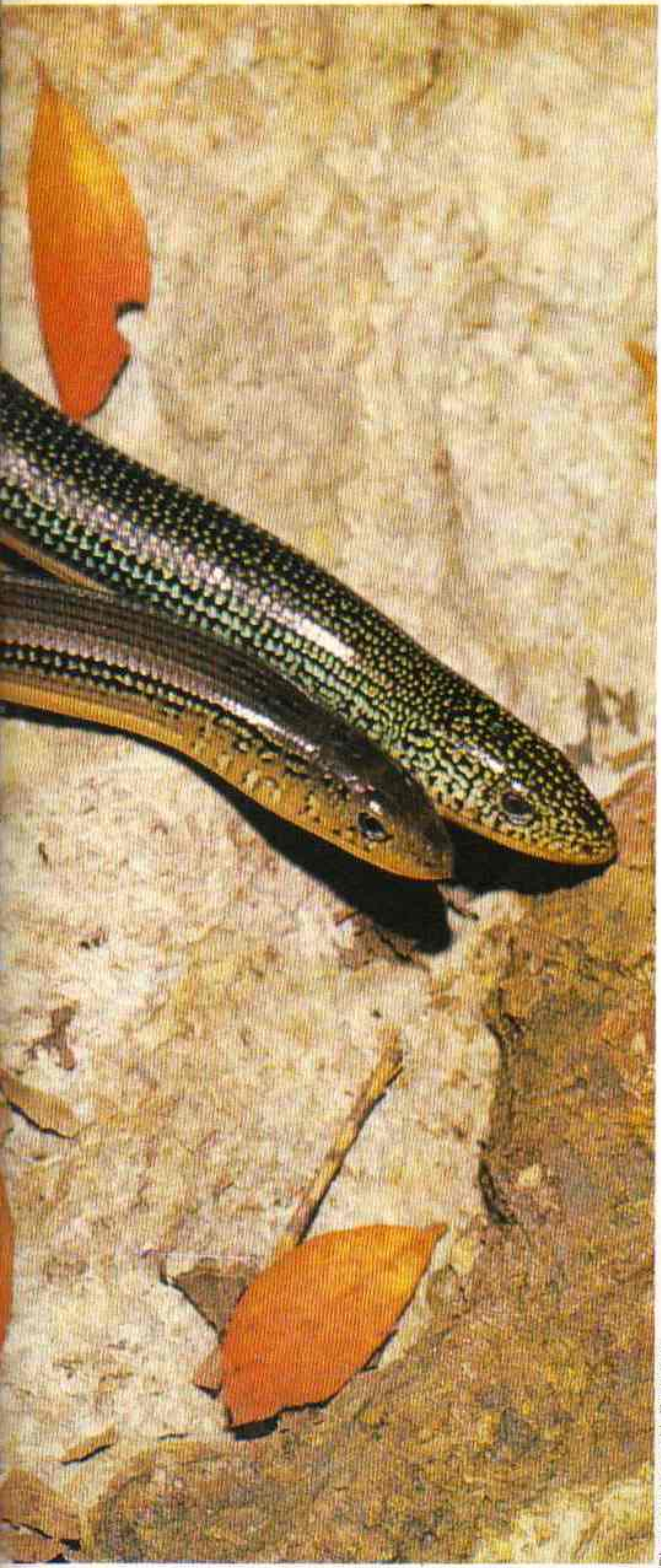


Photo by James H. Robinson

by Diane Swanson

When is a snake not a snake? When it's a lizard! The shiny gray-brown glass "snake" is really a lizard without legs. Like a snake, it's very long and thin. In fact, the glass snake is the longest lizard in North America, measuring about 27 inches (70 cm). No wonder that it could fool you at first glance.

Creeping along the ground, the glass snake looks very much like a true snake. But it isn't nearly as graceful. Instead of gliding, the glass snake throws its body stiffly from side to side. If you listen carefully, you may even hear it creak as its scales rub together. Even so it can travel quite quickly.

A very long time ago, the ancestors of today's glass snakes did have legs. But as they took up a life of burrowing in the ground, they no longer needed legs. So, over many years, the lizards with smaller legs survived better than those with larger legs. Finally the legs disappeared. All that a glass snake has today are traces of hip bones beneath its skin.

When you see a glass snake in the wild or in a zoo, notice its eyelids. It can wink them open and closed just as any other lizard can. It also has a lizard's small ear openings. A snake has neither of these.

You probably have seen pictures of snakes swallowing large objects, such as whole gophers or rats. The glass snake cannot open its mouth wide enough to do that. But its jaws are very strong. They can easily crush the eggs of any small ground-nesting bird. Then the glass snake licks out the contents with its flat, broad tongue. Other meals include insects, spiders, snails and worms.

These "glass snakes" are really lizards with no legs. Their tails may break like glass, then grow back shorter and a different color.

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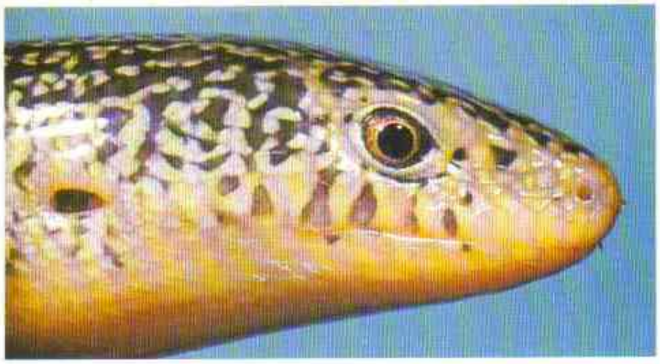
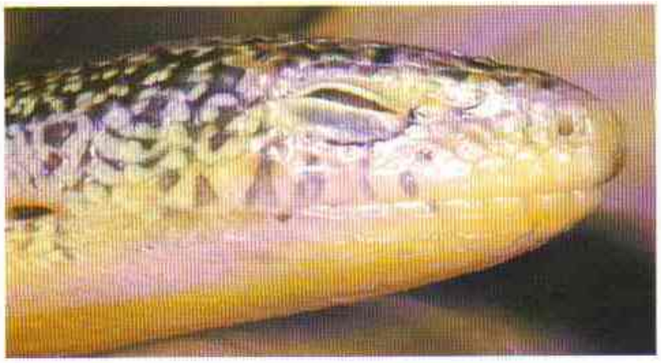
Photos by Constance P. Warner





How do you tell a long lizard with no legs from a snake? Look for ear holes and eyelids. A lizard can wink!

When hunting, a glass snake creeps through grassy and weedy places. If you're lucky, and live in the Midwest or Southeast, you might spot it one morning or evening. That's when it is most active — especially after a heavy rain. But the glass snake spends most of its time burrowing in the ground. Sometimes farmers uncover glass snakes while plowing or while harvesting potatoes.

Now you know why the glass snake is called a "snake." But why the name "glass"? The answer lies in its amazing tail. If its tail is tugged or hit, it may break like glass into several pieces, without bleeding. The pieces never join together again or grow into new lizards as some people think. Instead, the glass snake grows a new tail.

A glass snake's original tail is at least twice as long as its body. A new tail is shorter and stiffer. Fewer than half of the glass snakes found in the wild still have the tails they hatched with.

If only the end of the tail breaks off, a glass snake grows a new tip. The new tip is often a color different from the rest. Some people wrongly believe that the new tail is a stinger.

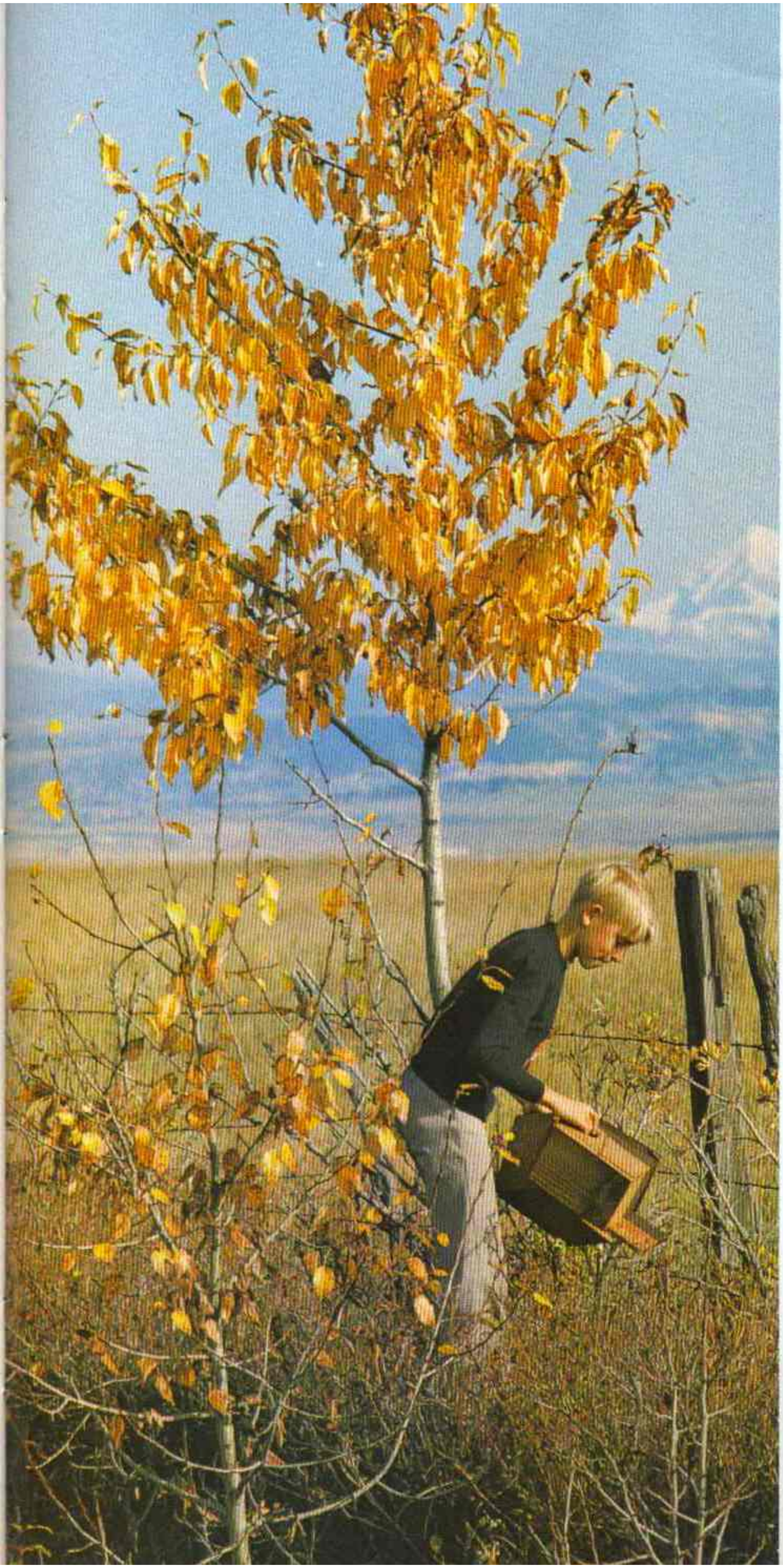
Sometimes a glass snake may choose to leave its tail behind to save its life! Just imagine a king snake out hunting for lunch. Suppose it catches a glass snake by the tail. The glass snake breaks off its tail, which keeps wiggling for a few minutes, fooling the king snake. Meanwhile the glass snake has time to make a quick getaway.

A female glass snake in danger will flee even if she has eggs to care for. But if all goes well, she stays with her eggs from early June to early August. Usually she lays about a dozen eggs and piles them closely together. Eventually baby glass snakes in their khaki-colored birthday suits creep out of the eggs.

Most of the baby glass snakes make their own homes underground and in the grass. And just maybe one will find itself in a zoo. At first a captive glass snake squirms wildly when handled. It will try to bite with a mouthful of teeth — about 165 of them! In time it may become tame. It may even learn to take raw meat and egg from a zookeeper's hand. But if it is left in a cage with smaller glass snakes, it may eat them.

Now that you know the glass snake's secrets, it should never fool you. When you see one in the wild or in a zoo, go ahead and wink. Since it's a lizard rather than a snake, it just might wink back!

The End



Dear Ranger Rick,

I've loved birds since I was seven. I never dreamed then that someday I'd have my own "bluebird trail"!

My trail idea came from working with the city naturalist here in Calgary, Alberta, in Canada. Outside the city he had set up 400 houses for mountain bluebirds. Whenever we checked them we followed a certain route, or "trail," from one house to another.

I thought it would be fun to make my own bluebird houses. I knew that the bluebirds needed all the help they could get with nesting sites.

I used scraps of wood and made 51 houses that first year. That was in 1977. My parents and my grandmother helped me put them out at the end of March. Bluebirds like pastureland, so I put the

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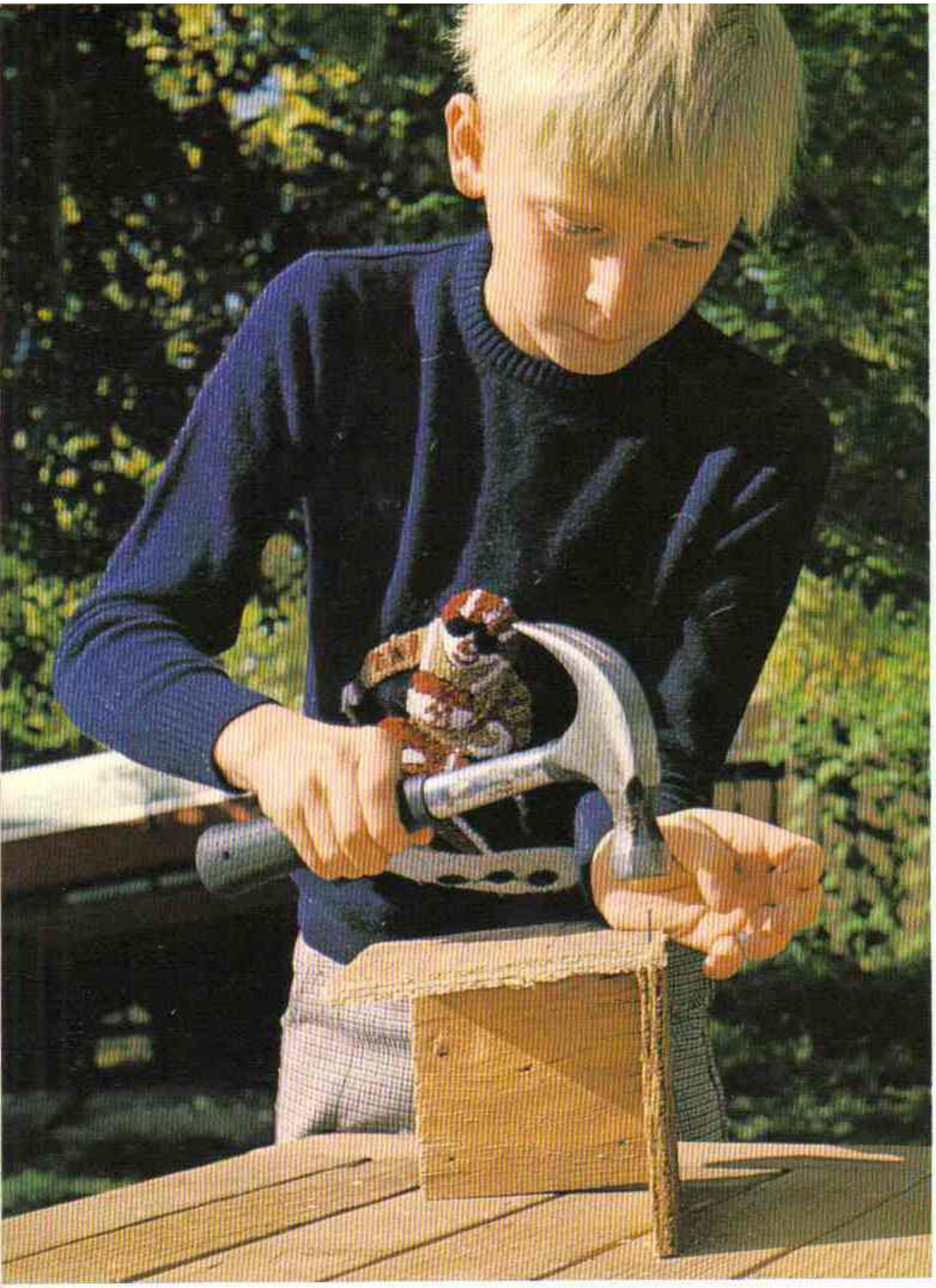

houses on fence posts around open fields. I made sure the nesting boxes were about a half-mile (.8 km) apart so each bird family would have enough room. By the time I put up all 51 boxes my trail was 25 miles (42 km) long!

I checked my boxes at the end of May. The roofs had fallen off 41 boxes so I had to repair them in the field. About one minute after I put one box back on a post, a pair of tree swallows took it over! That was O.K. with me because I like tree swallows almost as much as bluebirds.

Four other boxes I checked had swallows in them too. I found a house wren in another box, then finally a bluebird! Each bird had begun to lay eggs, and the bluebird already had young.

Now I had a chance to try something I had learned from the city naturalist — bird banding. I reached into the box, picked up the bluebird and held it carefully. Then I put a small metal band on her leg. The band had a number on it. Now, whenever I pick up a bluebird with that number, I'll know that it is the same bird.

The next time I checked the boxes I was really happy! There were 25 birds in them! The bluebird I had banded had two young birds and four unhatched eggs in the nest. Those eggs were *infertile*, which means no young were growing in them. I also banded nine tree swallows that day.

Last year I made 50 more houses to add to my trail. I put the houses in places which bluebirds like best and I had much better luck than the year before. Of the 136 bluebird eggs, 88 hatched and 88 survived. No dead young were found later. I was really excited about that!

The tree swallows did better too. Only 17 out of 347 died. I found bands on four live swallows. The most exciting part of all was finding a tree swallow which the city naturalist had banded over 10 miles (16 km) away the year before!

Another really interesting thing happened. I discovered a bluebird nest with nine eggs in it! Usually the female lays five to seven eggs. For some reason, probably because they were infertile, none of the eggs hatched. But that didn't seem to bother a pair of

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Photos by John Colville

tree swallows. After the bluebird left the nest a pair of tree swallows moved in. They built their nest right over the bluebird's!

When the swallows left I took their nest out of the box. There were the nine bluebird eggs! Not a single egg was broken.

I had another surprise when I was checking my boxes and found three adult tree swallows in one box. Maybe they were having a party, because that box sure was crowded! Later on a pair of swallows used that box to raise their young.

I check my trail five times a year: First, I clean out the boxes and make sure they're ready for new tenants. Second, I count the eggs. Third, I count the young. Fourth, I see if any bluebirds start a second family. Fifth, I count any dead young to see how many second bluebird families have survived.

My parents say they have to do an awful lot of driving along my bluebird trail. But I don't think they really mind. They were just as excited as I was when we realized I had helped increase the number of bluebird families on my trail from one to 23!

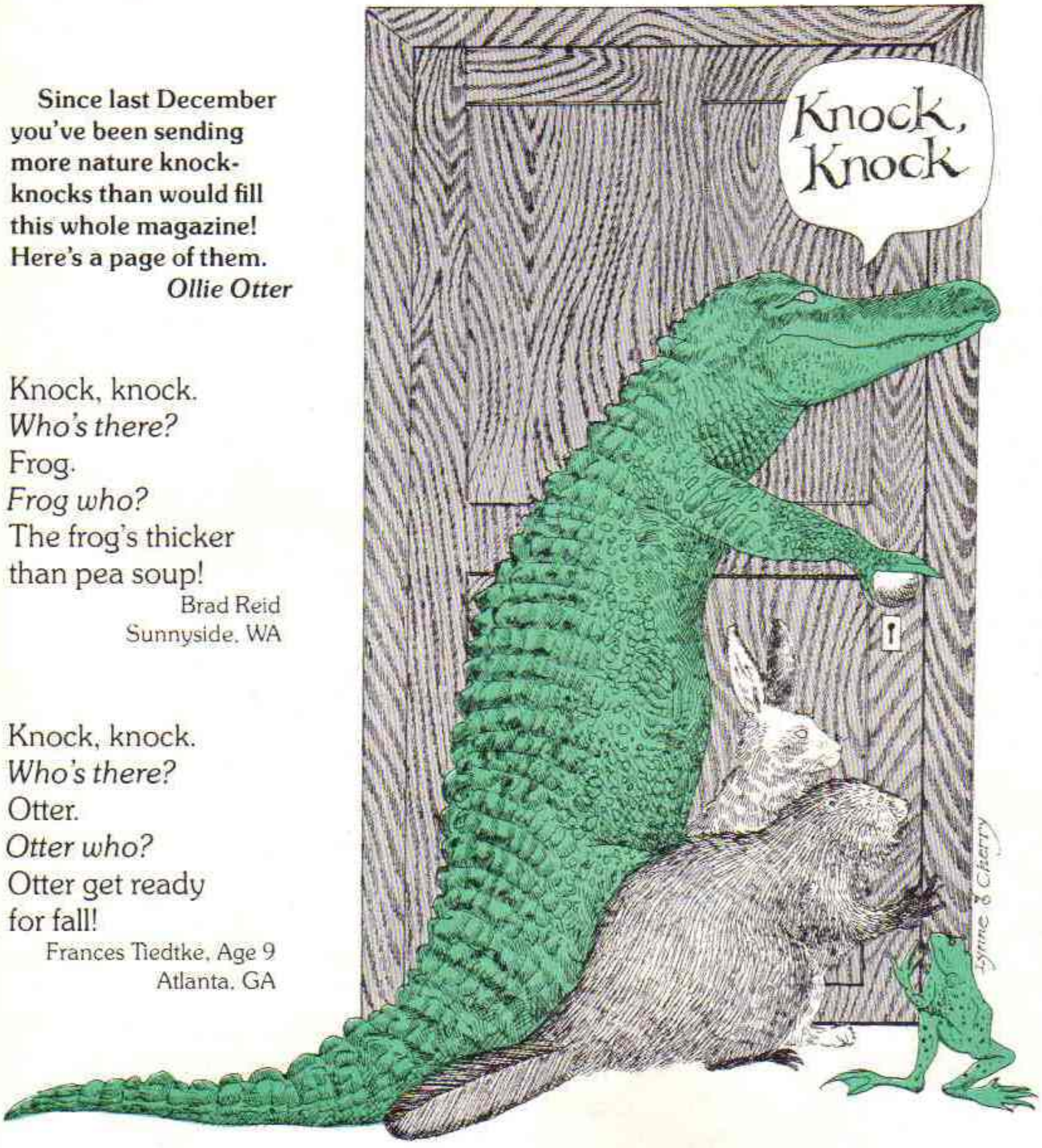
Andrew Stiles, Age 12
Calgary, Alberta, Canada

OLLIE OTTER'S FUN PAGE

Since last December you've been sending more nature knock-knocks than would fill this whole magazine! Here's a page of them.
Ollie Otter

Knock, knock.
Who's there?
Frog.
Frog who?
The frog's thicker
than pea soup!
Brad Reid
Sunnyside, WA

Knock, knock.
Who's there?
Otter.
Otter who?
Otter get ready
for fall!
Frances Tiedtke, Age 9
Atlanta, GA



Knock, knock.
Who's there?
Rabbit.
Rabbit who?
Rabbit good please,
it's for someone's
birthday!
Amy Ledbetter, Age 12
APO, NY

Knock, knock.
Who's there?
Lion.
Lion who?
Lion here on
your doorstep,
waiting to get in!
Marc Howard Aerni
Arlington, VA

Knock, knock.
Who's there?
Gopher.
Gopher who?
If you gopher
that picture
you're crazy!
Heather Tindall, Age 12
Colorado Springs, CO

Knock, knock.
Who's there?
Owl.
Owl who?
Owl we get
out of here?
Jessica Tuteur
Napa, CA

Knock, knock.
Who's there?
Possum.
Possum who?
Possum me the
spaghetti, please.
Jessica Tuteur
Napa, CA

Knock, knock.
Who's there?
Lettuce.
Lettuce who?
Lettuce in, it's cold out
here!
Jeff Brenneman
Mechanicsburg, PA

Knock, knock.
Who's there?
Thistle.
Thistle who?
Thistle be the
last knock-knock!
Peggy Heiseler
Roxbury, NY

WHO-O-O KNOWS?

Dear Wise Old Owl:

If I dig deep enough, will I find evidence of the prehistoric animals?

David Deadrich, Age 10
Monrovia, Liberia, West Africa

You might! Rocks that were formed from mud, sand or pebbles often have fossils in them. Limestone is especially good for finding fossils.

The best places to look are in dry regions where soil doesn't cover the rocks. Look where rivers or roads have cut deeply into the layers of rock.

You aren't likely to find an entire dinosaur skeleton, but you might find a fossil shell or a shark's tooth. And you just could be the one to discover a whole new kind of prehistoric animal!

How do scientists know what time period a dinosaur lived in?

Mike Golla
Lakewood, CA

Through the ages, layers of rock have been laid down on the surface of the earth. The oldest rocks are on the bottom and the youngest on top. Scientists notice the layer of rock in which a fossil is found. Then they can compare its age with the age of fossils above or below it.

Scientists also figure the ages of rocks by measuring the amount of radioactivity in them.

I have always wondered what the armor on the dinosaurs was made of.

Kurt Bradley, Age 11, Lake Elsinore, CA

Dinosaurs such as the *Ankylosaurus* had armor made of bony plates. The *Stegosaurus* had bony fins on its back. But not all dinosaurs had armor. Some had rough, scaly skin and others had smooth skin.

Drawings by Cyndy Szekeres

When scientists find dinosaur bones, how do they figure out how to put them together?

Tom Dillon
Thousand Oaks, CA

Putting a dinosaur together is like doing an enormous jigsaw puzzle with some of the pieces missing.

But the scientists who put the bones together are very patient. And they have studied all about the bones of other dinosaurs and of animals living today. Believe it or not, the bones of a dinosaur are very similar to those of present-day animals. A dinosaur's ribs look a lot like yours. In fact, the leg bones of some dinosaurs are almost identical to the leg bones of a present-day chicken. Of course, their legs were a *bit* bigger than a drumstick!

How do scientists name a dinosaur?

Dion Neumiller, Naper, NE

Usually their names are made up from Greek and Latin words. The word dinosaur comes from two Greek words that mean *terrible lizard*.

Sometimes dinosaurs are named after the person who discovered them or the place where they were found. But often they have names that describe how they looked or lived. Here are the translations of a few dinosaur names you may know:

STEGOSAURUS—*covered lizard*,
named for the bony plates running down its back.
DIPLODOCUS—*double beam*,
named for its huge bones.
TYRANNOSAURUS—*tyrant lizard*,
named because it was a powerful predator.
TRICERATOPS—*three-horn face*—
you can probably guess why.

I have heard that scientists have found frozen prehistoric elephants and have eaten their meat. Is it true?

Bob Corneall, IV
Arusha, Tanzania, East Africa

Yes, it is. During the Ice Age there were huge, woolly relatives of elephants called *mammoths*. A few of these died and were quickly frozen in the ice. When this happened, their meat was preserved just like meat in your freezer. Sometimes a whole mammoth is discovered in the Arctic. People have eaten this meat, but mostly to show off. (Don't worry—they cooked it first.)

Recently miners searching for gold in Siberia came upon a perfectly preserved baby mammoth. It had been frozen in the ground for 44,000 years!

Please turn the page

What's a good place to see fossils in the United States?

Ginny Hua
New Brunswick, NJ

It all depends on the kind of fossils you are looking for, Ginny. A great place to see dinosaur bones is Dinosaur National Monument in Colorado and Utah (see *Ranger Rick*, January 1979).

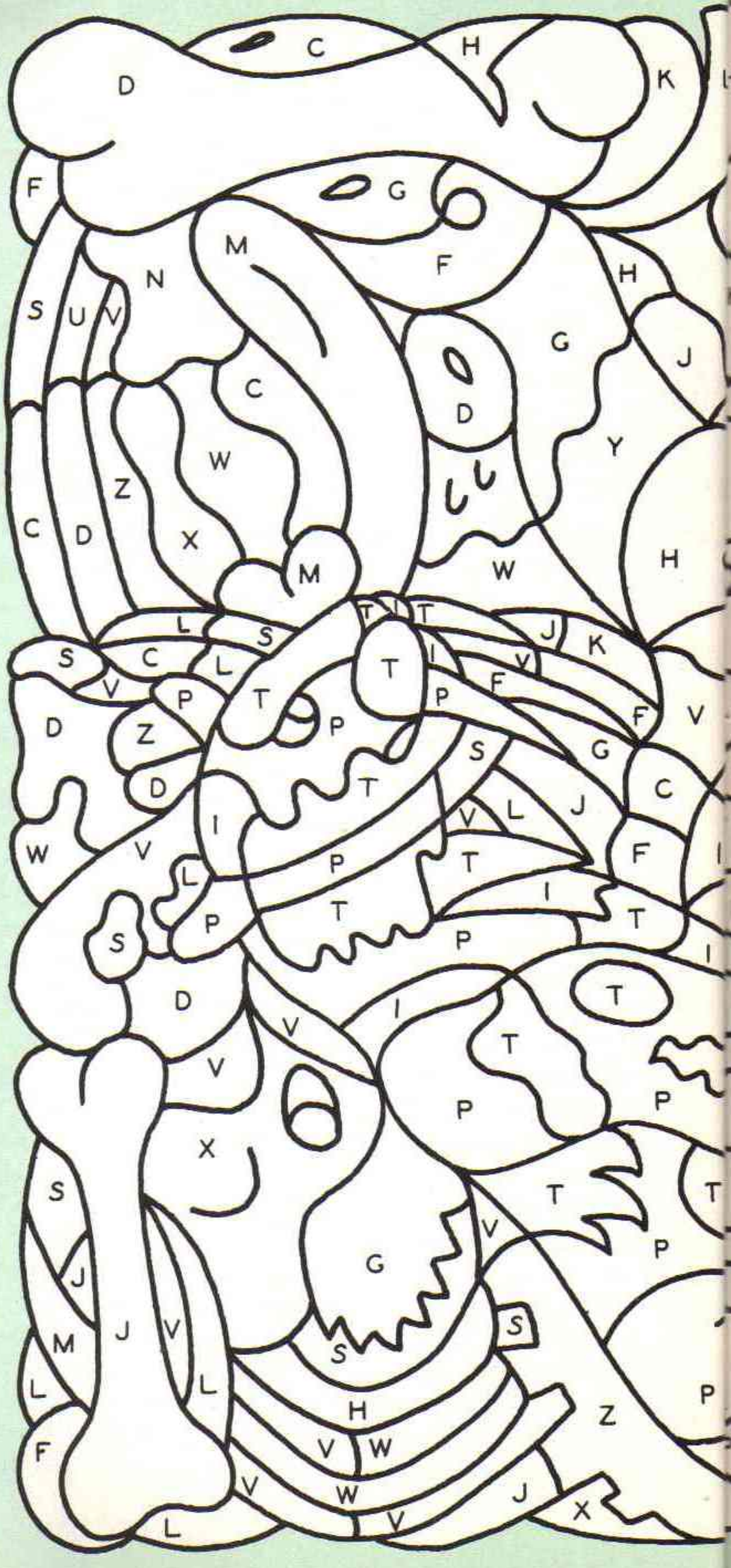
The best place to see Ice Age fossils is the La Brea Pits in Los Angeles, California. (*Brea* is the Spanish word for tar.) During the Ice Age there were huge bogs of tar, which were often covered with shallow pools of water. When animals came to drink they became trapped in sticky tar. In 1906 the bones of a giant prehistoric bear were discovered there. Since then skeletons of about one million animals have been dug out.

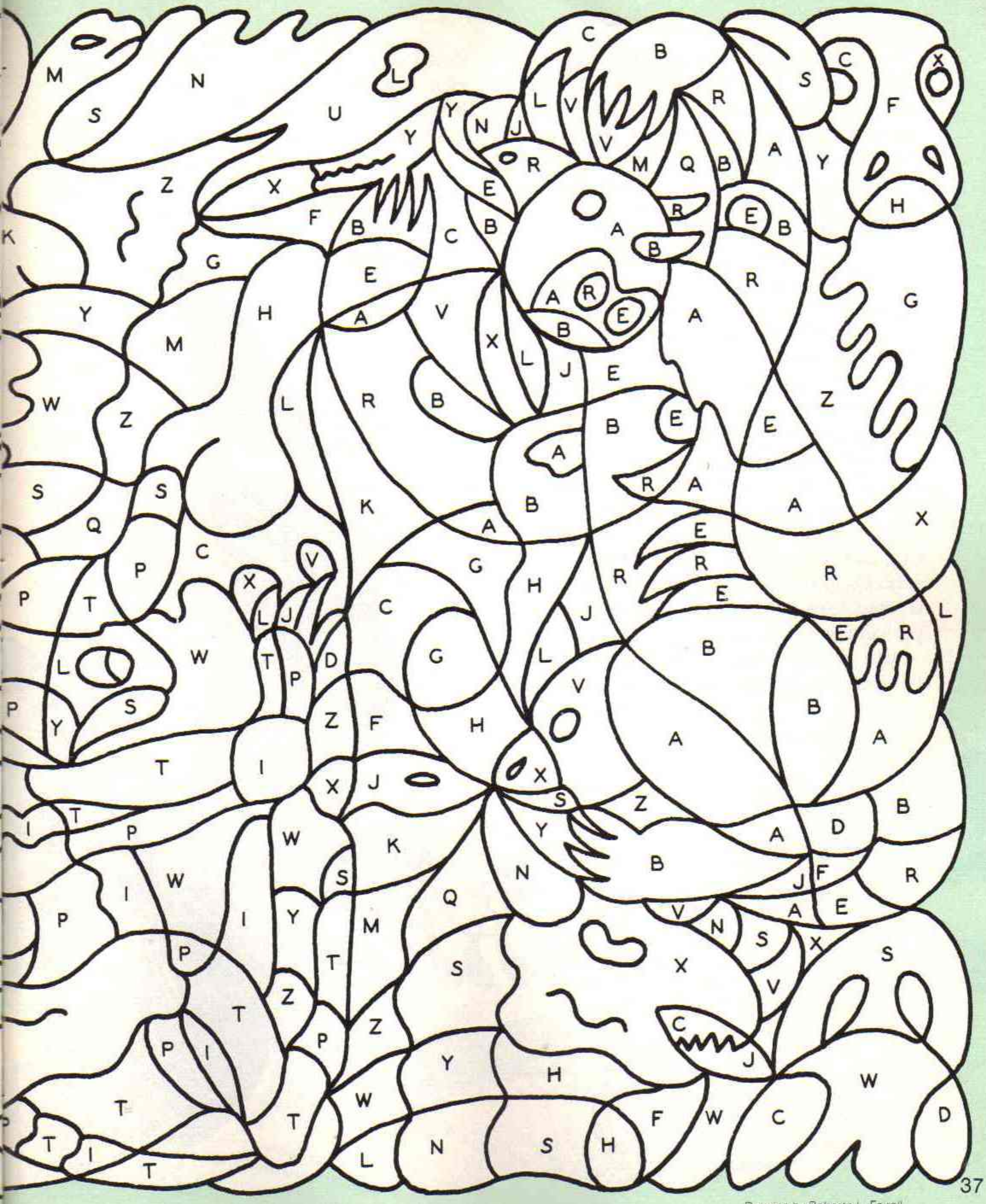
Two of these animals are hiding at right. To find the first, color the spaces containing the letters in BREA. To find the other, use a second color for each space containing the letters in PIT.

W.O.O.

ANSWERS:

Giant ground sloth and saber-toothed tiger.





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S U Y L V N J R F
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M X L J E
W L R B B E Z
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I P Q V N S A E
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Drawing by Roberta L. Fairall

by Carsten Ahrens

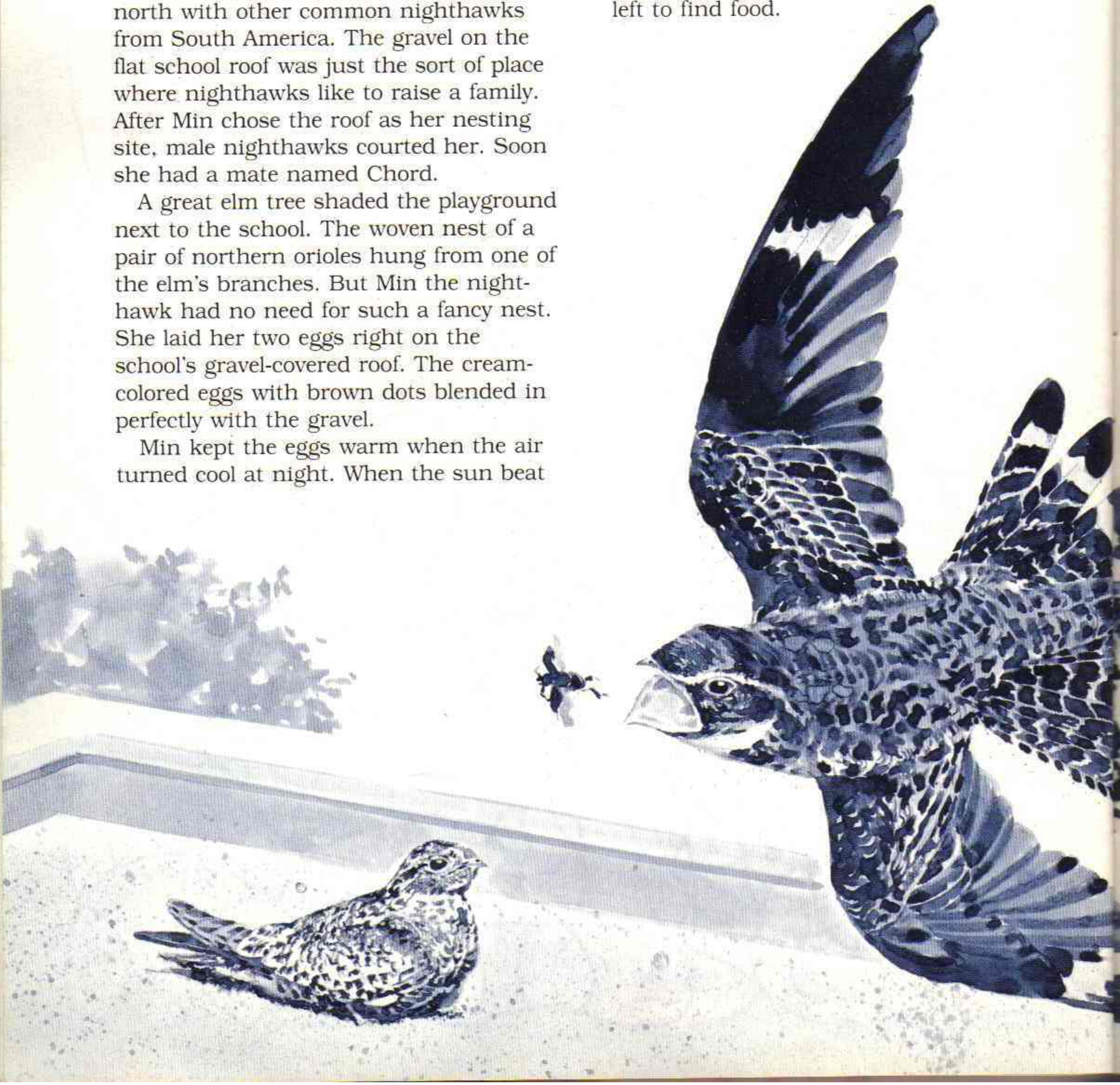
On the first day of June, Clayborne Elementary School rang with shouts and laughter. On June 2nd school closed for the summer. A strange silence fell over the halls. Not even a janitor was around on June 3rd when Min, a female nighthawk, landed on the school roof.

Min had just finished a very long flight north with other common nighthawks from South America. The gravel on the flat school roof was just the sort of place where nighthawks like to raise a family. After Min chose the roof as her nesting site, male nighthawks courted her. Soon she had a mate named Chord.

A great elm tree shaded the playground next to the school. The woven nest of a pair of northern orioles hung from one of the elm's branches. But Min the nighthawk had no need for such a fancy nest. She laid her two eggs right on the school's gravel-covered roof. The cream-colored eggs with brown dots blended in perfectly with the gravel.

Min kept the eggs warm when the air turned cool at night. When the sun beat down on the roof, her body shaded the eggs from the heat. If the eggs got too hot they could "cook." Sometimes the sun was so hot that Min had to pant like a dog to cool off.

Min's mate, Chord, didn't spend any time on the nest — that was Min's job. But he did stand guard nearby while she left to find food.



Sometimes, at dawn and at dusk, Chord would fly far above the roof. Then he would dive toward Min on the nest. Just before it seemed Chord would crash, he would swoop upward again. As Chord pulled out of his dive, the air rushing through his feathers made a noise like a loud burp!

Chord's dive seemed frightening. But he wasn't trying to scare Min. In fact, he was courting her. Now that Chord and Min were mates, he was letting her know that he was still interested in her.

But Min was too busy to be impressed by Chord's dive. Soon Chord would be busy too, helping Min feed the nighthawk chicks.

Most roofs are safe places for nighthawk eggs to hatch. But *this* roof was a short-cut for a fox squirrel that lived near the school. The squirrel usually ate acorns and other nuts, but it would eat birds' eggs if it got the chance.

Each time the fox squirrel scampered across the school roof, Min jumped up and hissed at it. She flapped her wings to scare it away.

But the hungry squirrel got bolder and bolder. One day it headed straight for the nest! Luckily Chord had just started one of his dives. Down he swooped, almost hitting the fox squirrel. The squirrel was so startled that it scooted across the roof and jumped to a bush below.

The next day two common nighthawk chicks hatched safely from the spotted eggs. Several days later they started to flap their wings. Before long they felt at home in the air. Their flight was fast, graceful and silent — like an owl's.

As the young nighthawks grew bigger, they flew farther and farther each night to find food. They had very wide mouths just like their parents'. Nighthawks' mouths are perfect for scooping up flying insects, such as beetles, flying ants and flies. They can eat hundreds each night.

Then one day in August, before most other birds started to migrate, Chord, Min and their young joined a flock of common nighthawks. They were ready to start the long trip to South America.

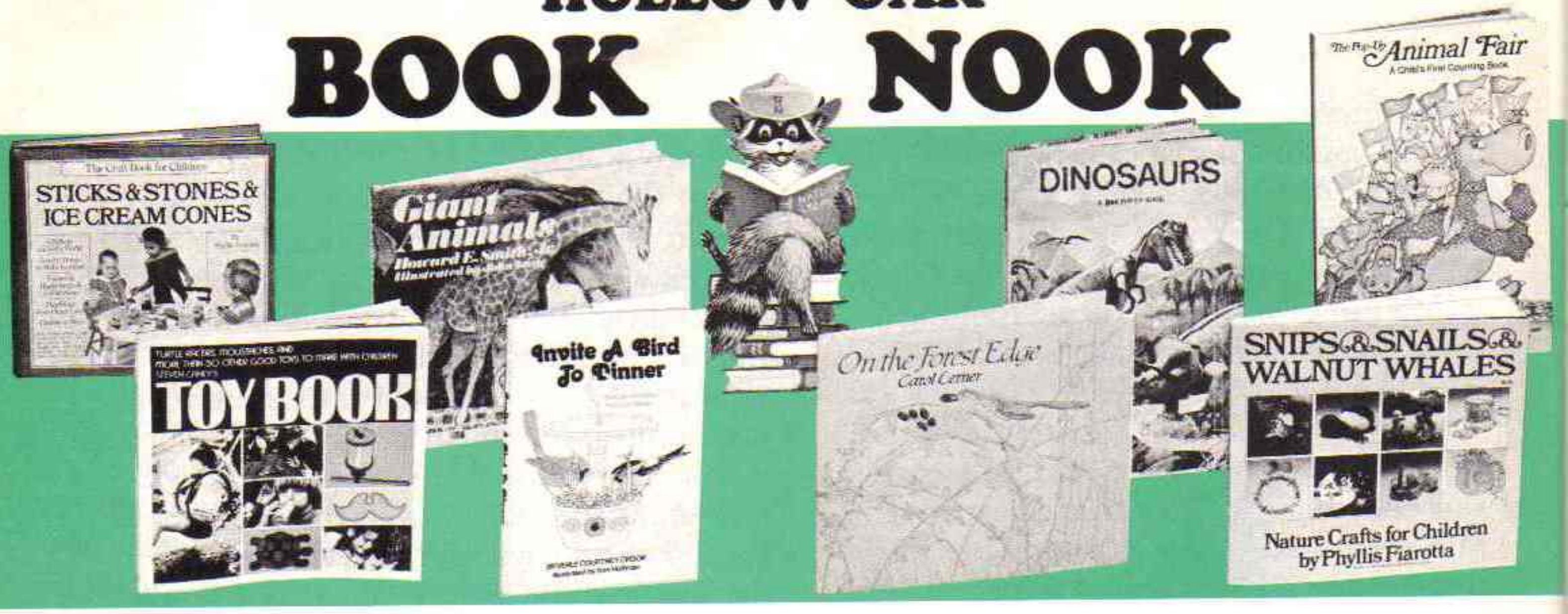
In September the children and teachers came back to Clayborne Elementary. But they never knew about the nighthawks on the roof of their school. *The End*

THE NIGHTHAWKS

Rangers: The scientific name for common nighthawks is *Chordeiles minor (kor-DAY-less MY-nor).* *R.R.*

Drawing by Ted Lewin

HOLLOW OAK
BOOK NOOK



STICKS & STONES & ICE CREAM CONES *by Phyllis Fiarotta.* Learn how to make a yarn octopus, a lion bean bag and many more delightful projects, toys and games. Easy to follow instructions show exactly how to make each one using sticks, stones and other easily found materials.

320 pages, 8½" x 9", all ages.

67216-2GF	**Non-members**	**$9.95**
67216GF	**MEMBERS' PRICE**	**$7.95**

TOY BOOK *by Steve Caney.* Do you know how to make a water lens or a sun dial? A barometer or a donut bird feeder? You'll find out how to make these and many other fun and educational toys in this delightful paperback book. Great for rainy day entertainment!

176 pages, 9" x 8¼", all ages.

63023-2GI	Non-members	$3.95
63023GI	**MEMBERS' PRICE**	**$3.15**

GIANT ANIMALS *by Howard E. Smith, Jr.* Can you imagine a worm twenty-two feet long? Or a clam as big as a suitcase? Well, they really do exist, and this lively illustrated book tells you all about them and many other huge creatures that inhabit the world.

59 pages, 9¼" x 7¾", ages 6-10.

67252-2GI	Non-members	$6.95
67252GI	**MEMBERS' PRICE**	**$5.55**

INVITE A BIRD TO DINNER *by Beverly Courtney Crook.* Filled with easy to follow illustrations, here is the perfect introduction to simple bird feeders to make to attract your favorite feathered friends. And recipes are included for delicious dinners to feed all the birds that come to visit.

64 pages, 6¾" x 9½", ages 8-12.

63050-2GI	Non-members	$5.95
63050GI	**MEMBERS' PRICE**	**$4.35**

ON THE FOREST EDGE *by Carol Lerner.* Beautiful true-to-life drawings illustrate the fascinating world of nature to be found near the edge of the forest. Birds and rabbits, insects and plants are all described and pictured; how they live, find food, and more.

50 pages, 10 x 8¼", ages 6-10.

63041-2GI	Non-members	$5.95
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DINOSAURS—A POP-UP BOOK. The mysterious and fascinating world of prehistoric beasts is pictured in striking and unusual three dimensional pop-up pictures that will entertain children as they learn about the creatures that lived on earth ages ago.

7¾" x 10¾", all ages.

64157-2GI	Non-members	$4.95
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SNIPS & SNAILS & WALNUT WHALES *by Phyllis Fiarotta.* Over 100 delightful nature crafts for children are explained and illustrated in this fascinating book of playtime fun. Bird feeders and mobiles, walnut animals and apple-head puppets, and much more is included.

286 pages, 9" x 8", all ages.

64193-GI	Non-members	$5.95
64193GI	**MEMBERS' PRICE**	**$4.75**

THE POP-UP ANIMAL FAIR. Children will love these delightful and fanciful three-dimensional pop-up pictures that show "Two kangaroos making stews" and "Three wise owls sewing towels" and more in this colorful and fun-filled counting book.

7¼" x 10¾", all ages.

64166-2GI	Non-members	$4.95
64166GI	**MEMBERS' PRICE**	**$3.95**

Canadian Residents — When ordering please indicate book title and number. Add 85¢ postage. Duty is payable upon delivery. Send your order to National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036

monarchs to mexico

by Julia Fellows

All summer long they drifted lazily over fields and gardens. The black-and-orange monarchs were a part of summer.

But now it is fall. The days are shorter. Soon frost will kill the flowers, and it will be too cold for the butterflies. One by one the monarchs start their journey south. As they travel, they stop to drink the nectar of goldenrod and asters. Each knows its own way, but sometimes huge groups of monarchs fly together. In some places the traveling monarchs cover the sky like a black-and-orange cloud.

No one knows what guides them. Perhaps they follow a special odor. One thing is certain: None of the monarchs have ever made this journey before.

The journey is dangerous. Some monarchs are eaten by birds. They must fly over mountains and deserts. Some must cross the ocean where there is no place to rest. Many die along the way.

The monarchs in the West travel to the coast of California. There they spend the winter clinging to branches of trees.

For a long time no one knew where the monarchs from Eastern and Central North America went. A few were found in Florida and

Please turn the page

along the Gulf Coast. But the winter home of the rest of the monarchs was a mystery.

Scientists tried to discover where the monarchs went by putting tiny tags on their wings. By tracking the tagged butterflies, the scientists learned that the Eastern butterflies were heading for Mexico. But where?

Finally in 1975 a young American searching the mountains of Mexico discovered acres of trees covered with butterflies. Millions and millions of monarchs clung to the evergreen branches. Tags on their wings showed that some had traveled 2000 miles (3200 km) from Canada. Here were the missing monarchs!

The winter home of the monarchs in Mexico is damp like the California coast. Clouds surround the dark trees. The air is cool.

The bodies of the butterflies are as cool as the air. They hardly move. If the monarchs are shaken from the trees, they are often too cold to fly back to their resting spot. All winter they rest, saving energy for the flight north in the spring.

In February the days begin to grow longer. Now the monarchs turn their wings toward the sun and start to flap them slowly. They are getting ready to fly north.

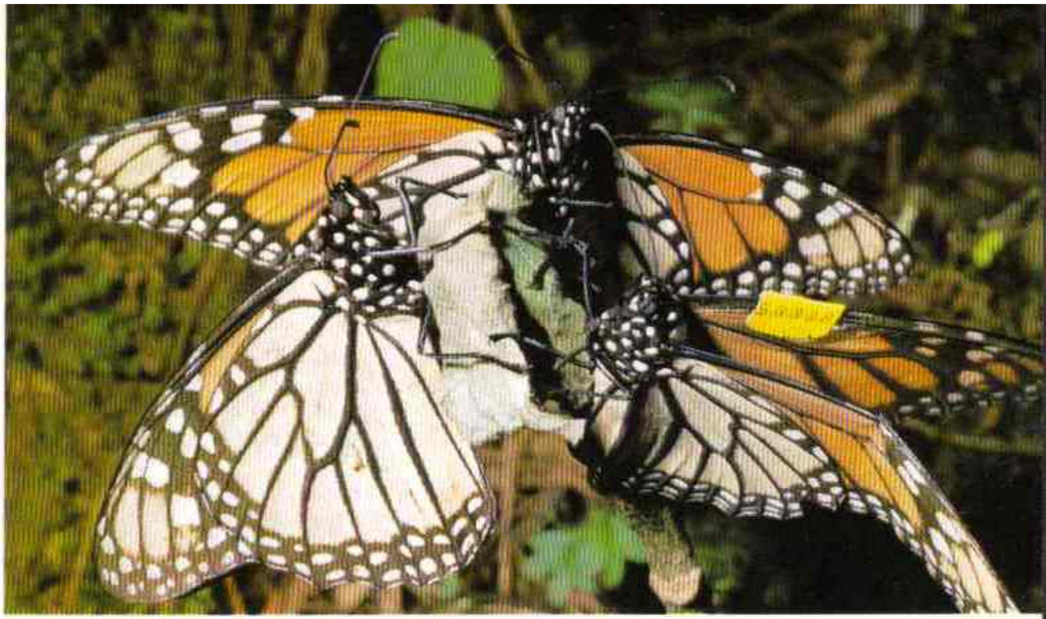
The monarchs mate before they leave. Almost all the males will die during the long trip back.

But the females return to the United States. As they travel, they stop to lay eggs one at a time on the leaves of young milkweed plants.

These eggs hatch. In just three weeks new butterflies are also heading north. Of the monarchs that arrive in the spring, some will have spent the winter in Mexico and others will have hatched somewhere along the way.

During the summer several generations of monarchs live, lay eggs and die in North America. By fall none of last year's monarchs are still alive. But the young monarchs know the way south to their cloud-covered winter home. No one needs to tell them. *The End*

Like orange leaves, millions of monarchs cling to the trees.



Yellow tags on their wings tell that monarchs flew 2000 miles to Mexico ▲. The trip was hard — many arrived with tattered wings.▼

Rangers: Next month you can read how children in Pacific Grove, California, celebrate the arrival of the monarchs in their city. *R.R.*

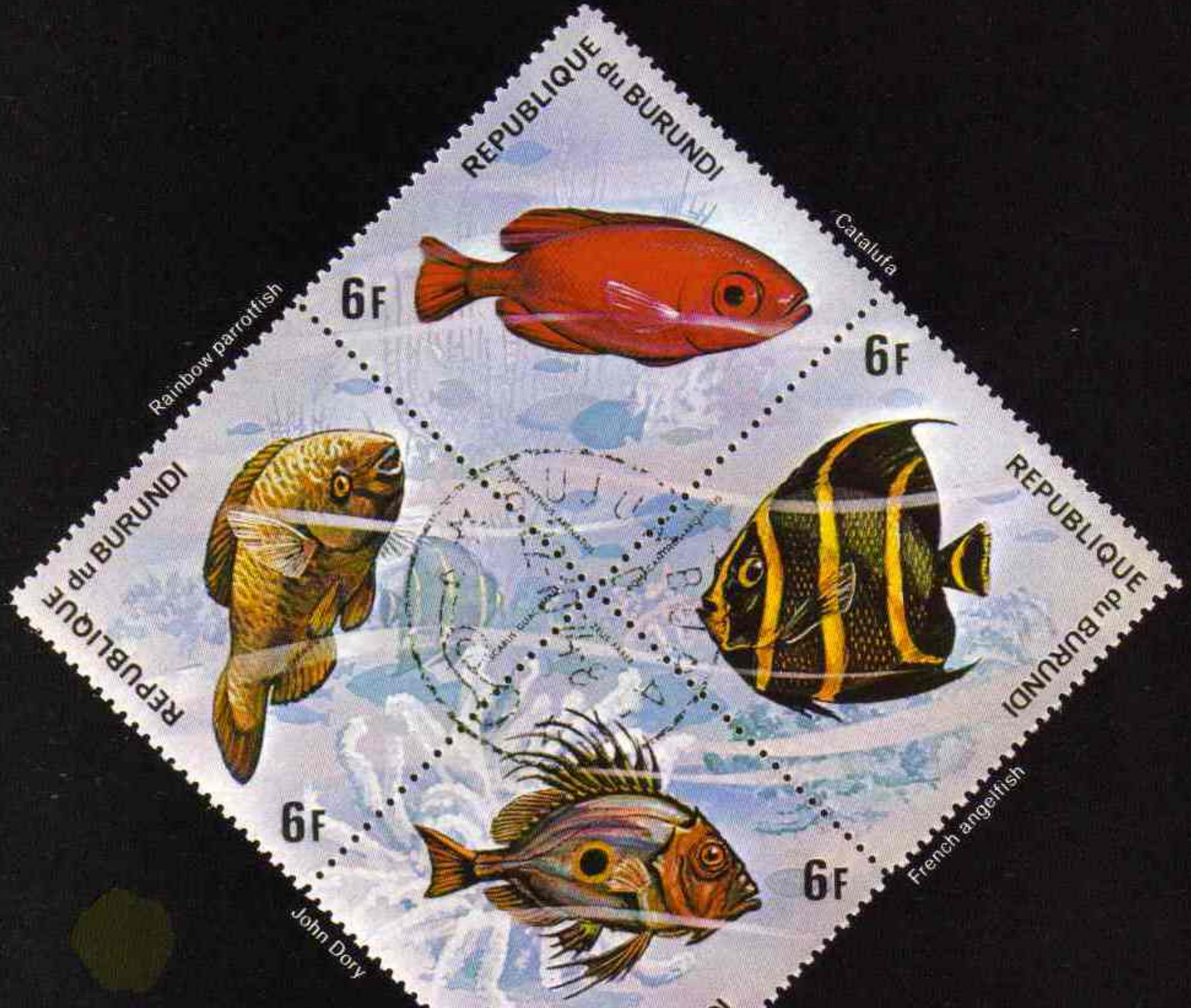
Photos by Rachel Lamoreux (41); Jeff Foott

SEA STAMPS

Story and photos by Sue and Jack Drafahl

How would you like to look at strange and beautiful undersea animals whenever you felt like it? It's fun and easy to do if you collect colorful pictures of these underwater creatures on postage stamps.

Many countries print pictures of underwater creatures on their stamps. When used on mail, the stamps help people learn about the animals that live underwater. Some countries also have stamps that show animals found along the coast of that region. Others show underwater animals found in other parts of the world.



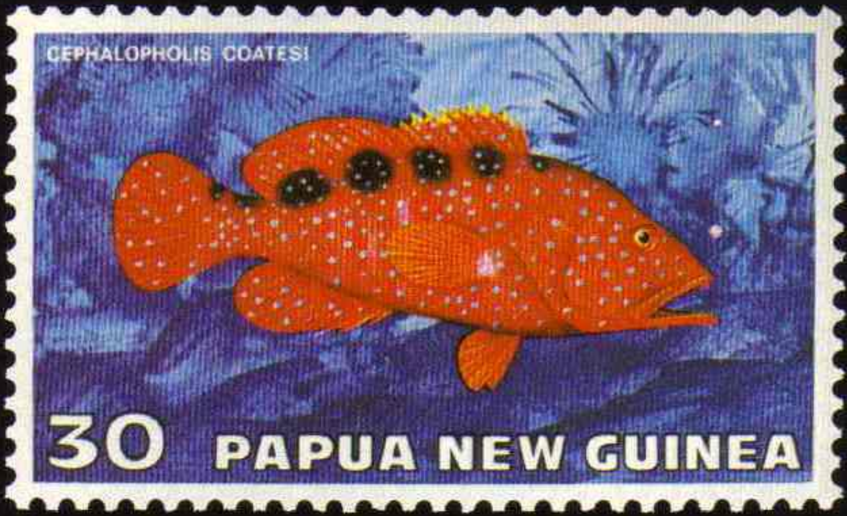
Catalufa

Rainbow parrotfish

French angelfish

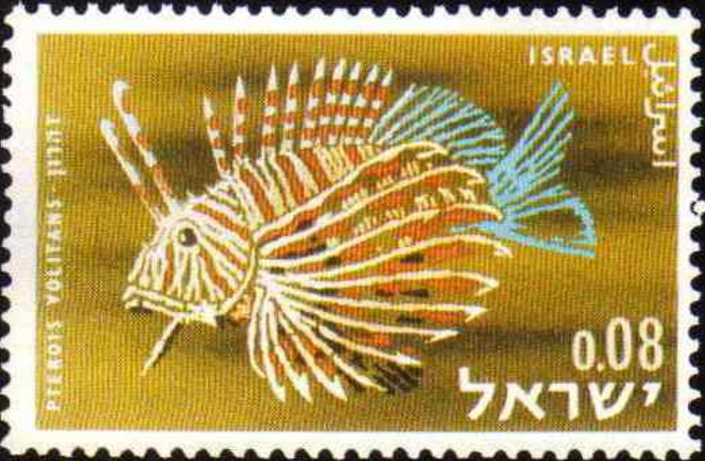
John Dory

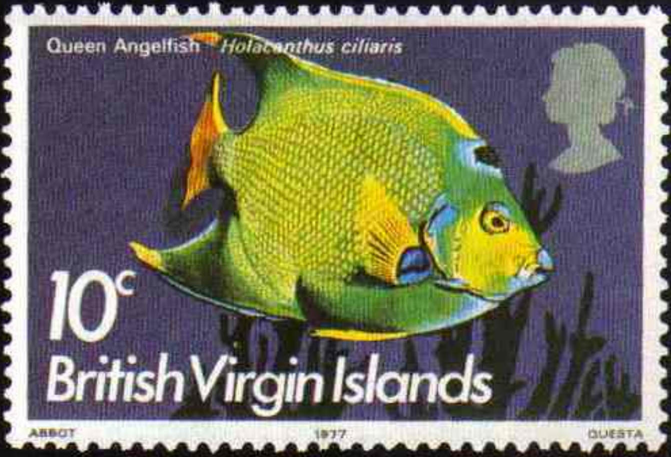
Blood sea bass

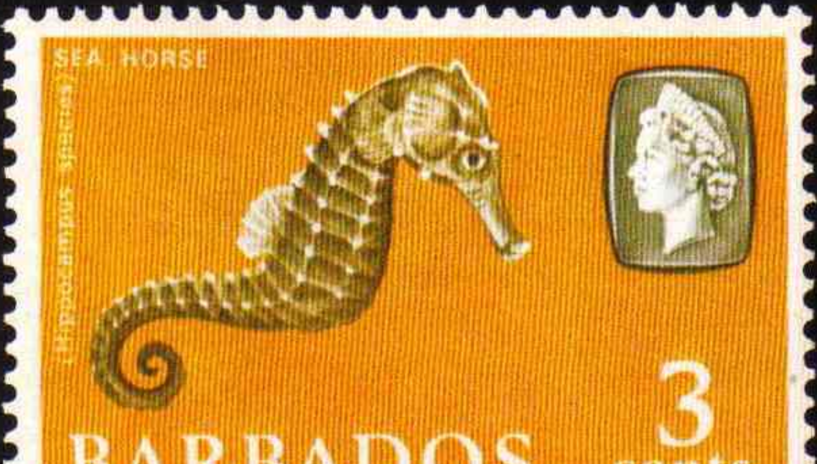


justinman@archive.org

Lionfish or turkeyfish



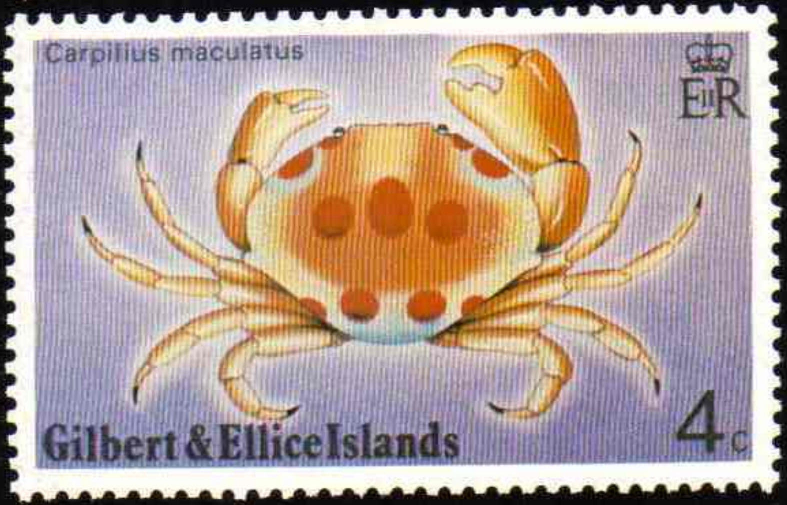




These colorful fish are much admired for their striking beauty. They may be a very familiar sight in the countries where the stamps were printed. Some of the fish that "swim" onto stamps have special meaning for the people who use them.

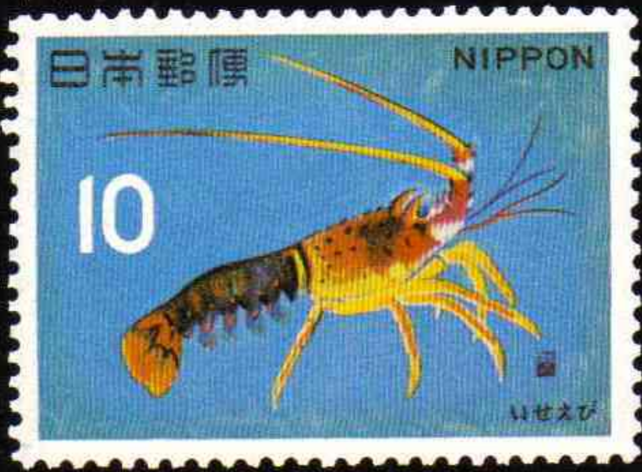
Please turn the page

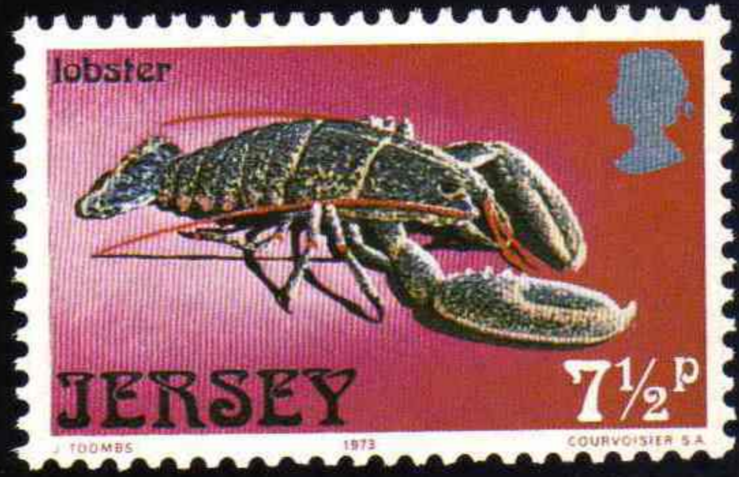
Spotted rock crab

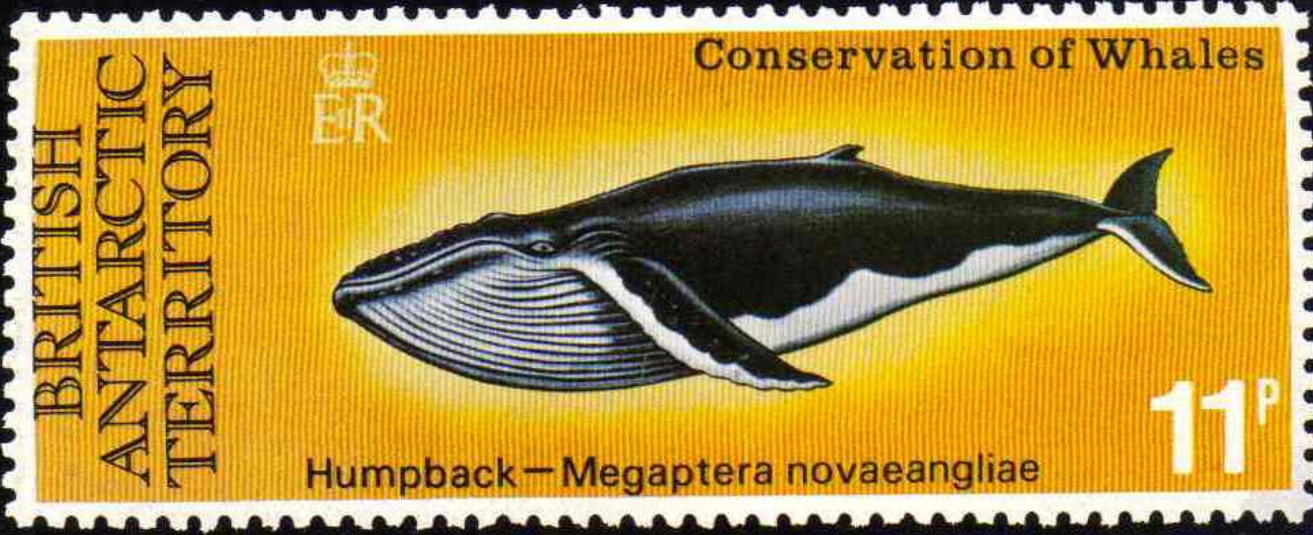


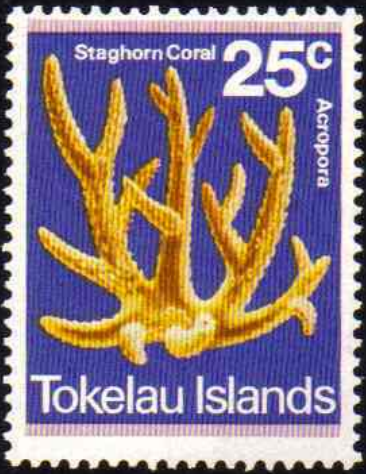
Crabs, lobsters and whales can be important for food or for income. But if people hunt and fish for too many of the animals, they may end up with none at all. Here they are, reminding us to conserve all forms of wildlife.

Spiny lobster

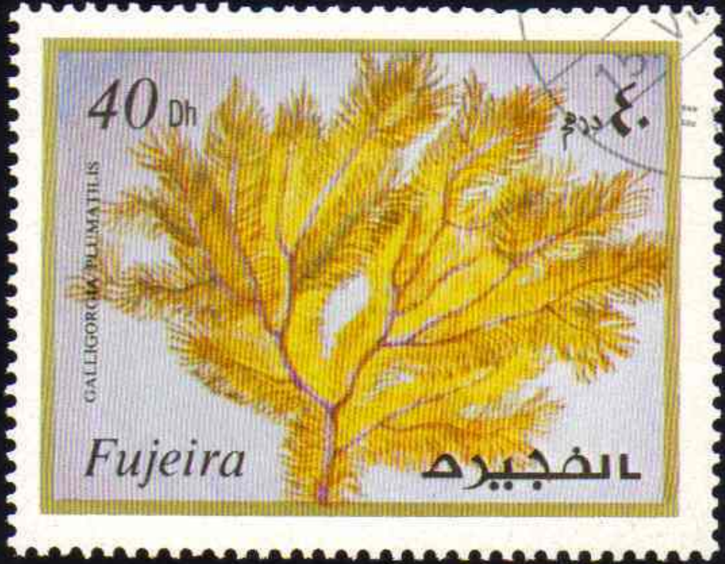

日本郵便
NIPPON
10
いせえび



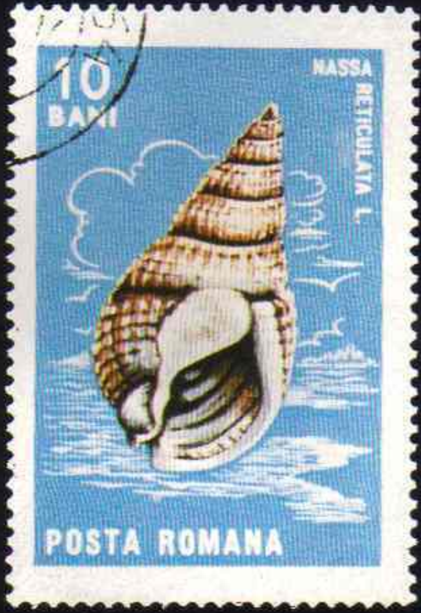

Conservation of Whales
BRITISH ANTARCTIC TERRITORY
EIIR
11p
Humpback — Megaptera novaeangliae



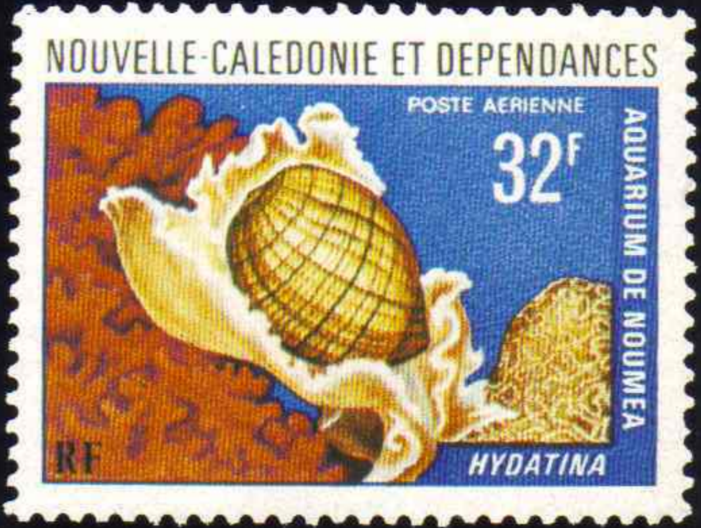
Sea plume

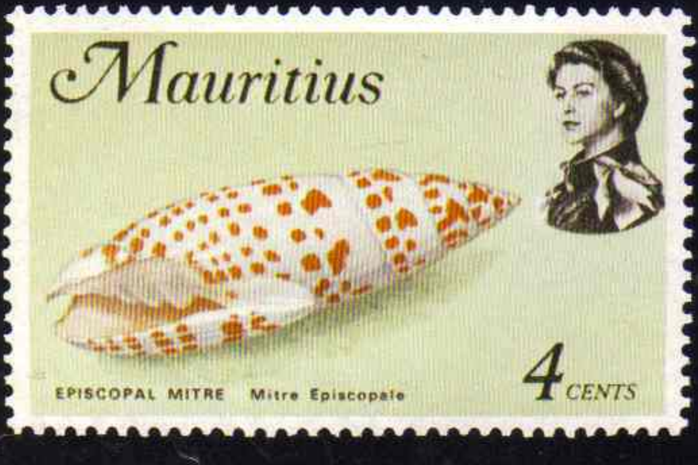


Mud snail



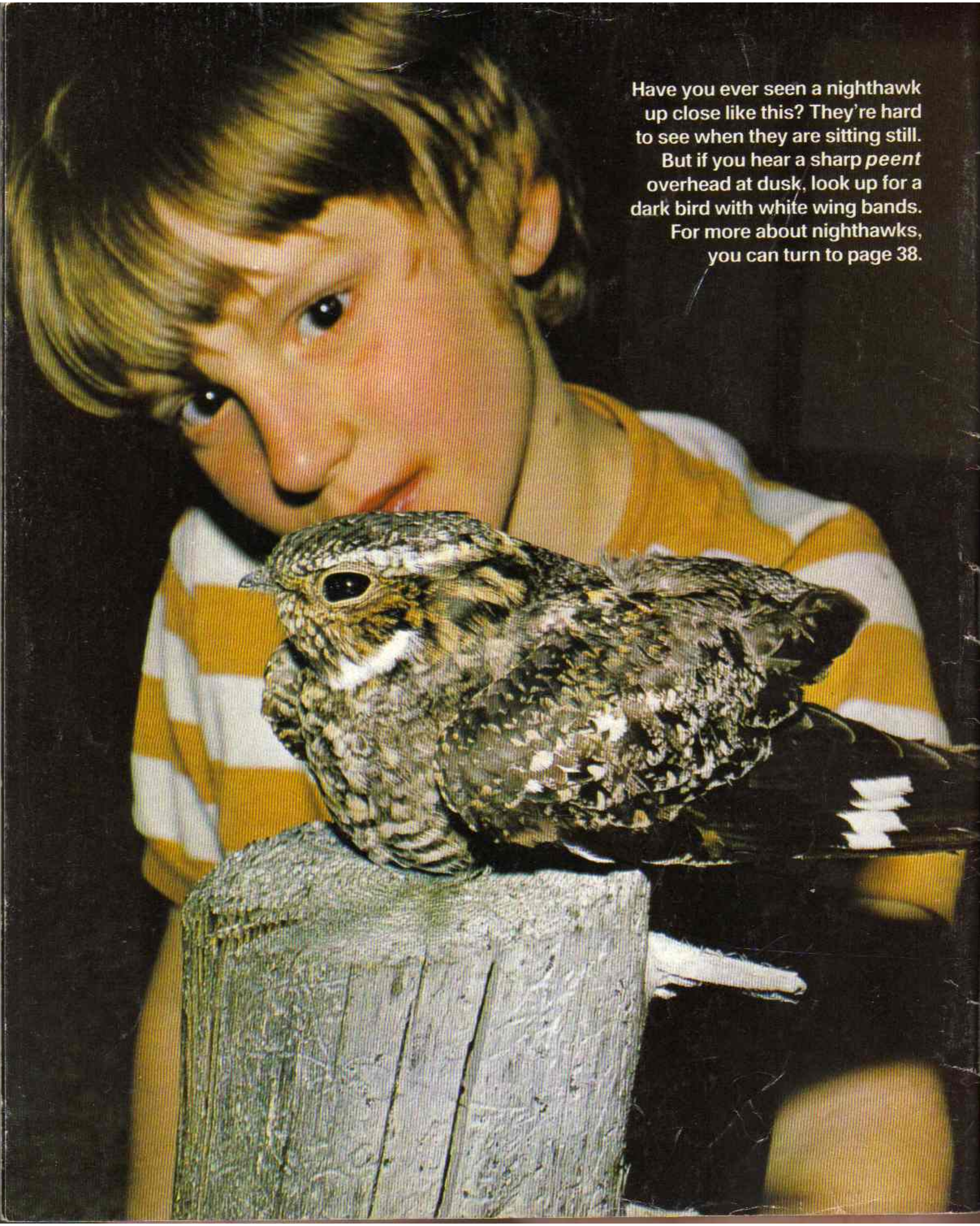
Bubble shell





People like to collect shells because of their colorful patterns and unusual shapes. Shells have also been used as tools, jewelry and money by some people, long after the shells stopped protecting the animals that lived in them.

The End



Have you ever seen a nighthawk up close like this? They're hard to see when they are sitting still. But if you hear a sharp *peent* overhead at dusk, look up for a dark bird with white wing bands. For more about nighthawks, you can turn to page 38.